CHAPTER 2—ALTERNATIVES

2.1 INTRODUCTION

This chapter presents four alternative proposals for managing mineral leasing and development pertaining to oil, gas, and potash on Bureau of Land Management (BLM)-administered lands as part of the Moab Master Leasing Plan (MLP) and associated environmental impact statement. BLM formulated this reasonable range of alternatives based on issues raised during scoping, planning criteria, public comments received on the preliminary alternatives, guidance applicable to specific resources, and the use of an interdisciplinary team of BLM resource specialists and cooperating agencies.

BLM held an open house for the public on May 14, 2014, in Moab, Utah, to explain the MLP process and to present maps of preliminary alternatives. On this date, the maps were also posted on the BLM website for public review. The public was encouraged to provide comments to BLM on the preliminary alternatives by the end of May. The comments received from the public, as well as cooperating agencies, were reviewed and used to refine the alternatives and to develop the preferred alternative.

The alternatives presented in this chapter involve a range of mitigation strategies and development constraints that include mineral leasing stipulations, mineral lease notices, mineral leasing decisions, and best management practices. These strategies and constraints are summarized in Tables 2-1 thru 2-16 and are organized by resource.

Mineral leasing stipulations are applied by alternative across the Planning Area and include timing limitation (TL), controlled surface use (CSU), and no surface occupancy (NSO). Areas identified with a TL stipulation prohibit surface use during specified time periods. Areas identified with a CSU stipulation require special operational constraints. Areas identified with an NSO stipulation prohibit use or occupancy of the surface for exploration and mineral development. The minerals under NSO lands may potentially be developed by directionally or horizontally drilling from nearby lands that do not have the NSO limitation. The mineral leasing stipulations applied by alternative for specific resources are provided in Tables 2-1 through 2-16. The stipulations developed for the protection of specific resources would apply to both oil and gas leasing and potash leasing as well as geophysical exploration. The stipulations have been developed in accordance with the potash unsuitability criteria specified at 43 CFR 3501.17.

Tables 2-5 and 2-6 (Minerals: Oil and Gas and Potash) include a description of a CSU stipulation (Baseline) that is applied to multiple resources and a CSU stipulation that requires the processing of potash to be conducted within Potash Processing Facility Areas (PPFA). The lands within the Planning Area may also be designated as closed to leasing or open to leasing subject to standard lease terms and applicable laws, regulations, and orders.

Stipulations may be excepted, modified, or waived by the Authorized Officer. An exception is a one-time exemption for a particular site within a leasehold. Exceptions are determined on a case-by-case basis, and the stipulation continues to apply to all other sites within the leasehold. A modification is a change to the provisions of a lease stipulation, either temporarily or for the term of the lease. A waiver is a permanent exemption from a lease stipulation; the stipulation no longer applies within the leasehold. The environmental analysis document prepared for site-specific mineral proposals (i.e., Applications for Permit to Drill [APD], sundry notices) also would need to address proposals to except, modify, or waive a surface stipulation. Exceptions, modifications, and waivers to the lease stipulations for the alternatives in the Moab MLP are provided in Appendix A.

Mineral lease notices that would be applied within Planning Area are provided in Tables 2-1 through 2-16 and Appendix A. A lease notice provides more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. A lease notice also addresses special items the lessee should consider when planning operations but does not impose lease stipulations.

A mineral leasing decision involves an approach to lease issuance rather than a stipulation applied to a lease. Leasing decisions include management actions such as phased leasing, maximizing lease size to the extent possible, and closing areas to leasing. Phased leasing could be utilized in order to protect important resource values in areas where the feasibility of development has not been established. Mineral leasing decisions are described in Tables 2-5 and 2-6 (Minerals: Oil and Gas and Potash).

Best management practices (BMP) are state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. BMPs are applied to management actions to aid in achieving desired outcomes for safe, environmentally sound resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. For each proposed action, a number of BMPs may be applied as necessary to mitigate expected impacts. BMPs can be applied by incorporating them into individual project proposals as design features or incorporating them into BLM's authorization of the project as conditions of approval. BMPs applied to the alternatives are provided in Appendix B.

2.2 DESCRIPTION OF THE ALTERNATIVES

The four alternatives presented in detail by resource in Tables 2-1 through 2-16 of this chapter are as follows:

- Alternative A is the No Action alternative and represents the continuation of existing mineral leasing management (oil, gas, and potash) under the Moab and Monticello Resource Management Plans (RMP) (2008). This alternative is the least restrictive to mineral leasing and development; however, current management provides protection for special designations and constraints for sensitive resources. Alternative A allows for oil, gas, and potash leasing and development to occur on the same tracts of land where it is consistent with the leasing decisions in the RMPs. The No Action alternative is required by the Council on Environmental Quality.

- Alternative B provides for mineral leasing and development outside of areas that are protected for high scenic quality (including public lands visible from Arches and Canyonlands National Parks), high use recreation areas, special designations, and other sensitive resources in a manner that minimizes surface disturbance and associated potential resource impacts. Mineral leasing decisions are divided into two options specified as Alternative B1 and Alternative B2 (Tables 2-5 and 2-6). The stipulations devised for the protection of specific resources in Alternative B apply to the leasing decisions in both Alternative B1 and Alternative B2.

- Alternative B1 provides for both oil and gas leasing and potash leasing. In Alternative B1, surface impacts would be minimized by separating the new leasing of the two commodities (oil/gas and potash), limiting the density of development in a manner that would not dominate the landscape, and locating potash processing facilities in areas identified with the least amount of sensitive resources. Separating leasing of oil/gas and potash would eliminate redundant infrastructure and ensure orderly development by setting apart the competing objectives of the two commodities. Potash leasing would involve a phased approach and would initially only be issued within identified areas. A phased approach to potash leasing would provide the opportunity to lease a limited portion of the Planning Area in order to determine the feasibility of potash development and methods for reducing resource conflicts.

- Alternative B2 provides for only oil and gas leasing; no new potash leasing would occur. Oil and gas is a proven economic commodity in the Planning Area while the feasibility of developing deep potash deposits with solution mining methods has not been established on public lands within the Planning Area. Leasing for oil and gas alone would meet the objective of minimizing surface impacts by eliminating the potential for redundant infrastructure associated with co-development of oil/gas and potash and eliminating the potential for potash processing facilities. Alternative B2 would also minimize surface impacts by limiting the density of oil and gas development in a manner that would not dominate the landscape.

- Alternative C emphasizes resource protection over mineral leasing and development. Alternative C provides for only oil and gas leasing; no potash leasing would occur. This alternative affords the greatest protection to areas with high scenic quality, recreational uses, and special designations, as well as BLM lands adjacent to Arches and Canyonlands National Parks and other sensitive resources. In areas open for oil and gas development, surface impacts would be minimized by limiting the density of oil and gas development in a manner that would not dominate the landscape.

- Alternative D is BLM's preferred alternative and provides for both oil and gas leasing and potash leasing. Mineral development would be precluded in many areas with high scenic quality, in some high use recreation areas, in specially designated areas, and in other areas with sensitive resources. Outside of these areas, surface impacts would be minimized by separating leasing of the two commodities (oil/gas and potash), locating potash processing facilities in areas with the least amount of sensitive resources, and limiting the density of mineral development. Potash leasing would involve a phased approach and would initially only be issued within identified areas. Alternative D provides operational flexibility for mineral leasing and development through some specific exceptions and closes BLM lands adjacent to Arches and Canyonlands National Parks to mineral leasing and development.

2.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Public Land Solutions Alternative

Public Land Solutions (PLS) provided recommendations on an alternative for the Moab Master Leasing Plan. PLS provided a map with what they believe are the necessary stipulations for oil, gas, and potash that are needed to best manage mineral extraction and the recreation economy in the Planning Area. The suggested stipulations consisted of 1) open with tailored stipulations; 2) NSO; 3) lease retirement zones, which would become closed areas; and 4) closed. BLM considered this alternative, but eliminated it from detailed analysis because it is substantially similar in design to BLM's Alternative C. The suggested stipulations delineated on the PLS map differ from Alternative C in what is designated as NSO versus closed. PLS specified closure of areas that Alternative C would manage with an NSO stipulation. For example, in the PLS alternative, Lockhart, Indian Creek, and Big Flat would be closed to mineral leasing. In Alternative C, these areas would be managed with an NSO stipulation. Although the differences were not significant enough to warrant independent analysis of a separate alternative, the map provided by PLS helped the BLM determine the important recreational areas/uses where major constraints to mineral leasing needed to be addressed.

Stakeholder Input for Alternative Consideration

Stakeholder mapping workshops were held in Moab, Utah, from February through March 2014. The workshops were initiated independently of and separate from BLM's MLP/Environmental Impact Statement (EIS) process and the workshops were neither convened nor requested by BLM. The goal of the stakeholder process was to identify and ultimately document within this final report the "areas of conflict,"

"zones of agreement," and "areas for further research with respect to recommended location of oil, gas, and potash development." Ultimately, consensus was not achieved on these issues and instead, emphasis was ultimately placed on sharing and documenting the range of interests shared by those participating in the process so that BLM could better understand the various concerns and interests held by each stakeholder.

Although the stakeholder workshops did not result in an independent alternative, a final report was submitted to BLM in May 2014. BLM utilized information in this report as an additional inventory of the resources and uses within the Planning Area to develop the alternatives in the Moab MLP.

2.4 ALTERNATIVE TABLES

Table 2–1. Air Quality

Alternative A	Alternative B	Alternative C	Alternative D
Objective Maintain or improve existing air quality and air quality-related values (e.g. visibility) by ensuring that all authorized uses on public lands comply with and support Federal, State, and local laws and regulations for protecting air quality.			
Management Actions Common To All Alternatives			
Comply with Utah Air Conservation (UAC) Regulation R446-1. The best air quality control technology, as per guidance from the Utah Division of Air Quality (UDAQ), would be applied to actions on public lands as needed to meet air quality standards.			
Comply with UAC Regulations R446-1-4.5.3 and R307-205, which prohibit the use, maintenance, or construction of roadways without taking appropriate dust abatement measures. Compliance would be obtained through special stipulations as a requirement on new projects and through the use of dust abatement control techniques in problem areas.			
Manage all BLM and BLM-authorized activities to maintain air quality within the thresholds established by the State of Utah Ambient Air Quality Standards and to ensure that those activities continue to keep the area as attainment, meet prevention of significant deterioration of Class I and Class II increments, and protect the air quality related values in the Class I air shed of the National Parks (e.g., Arches and Canyonlands National Parks) as well as Class II areas.			
BLM would continue to work cooperatively with State, Federal, and tribal entities in developing air quality assessment protocols to address cumulative impacts and regional air quality issues.			
National Ambient Air Quality Standards are enforced by the Utah Department of Environmental Quality, Division of Air Quality (UDEQ-DAQ), with Environmental Protection Agency (EPA) oversight. When processing land use authorizations additional emission control requirements to reduce potential air quality impacts would be considered on a case-by-case basis in consultation with UDAQ, EPA, and other Federal agencies whose lands may be impacted by the proposal.			
Project specific analyses would consider use of quantitative air quality analysis methods (i.e. modeling), when appropriate as determined by BLM, in consultation with State, Federal and tribal entities.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
BLM would utilize BMPs and site-specific mitigation measures, when appropriate, based on site-specific conditions, to reduce emissions and enhance air quality. Examples of these types of measures can be found in the Four Corners Air Quality Task Force Report of Mitigation Options, November 1, 2007. In accordance with a UDEQ-DAQ letter dated June 6, 2008 (See "Letter from the State of Utah Regarding Air Quality Mitigation Strategies") requesting implementation of interim	Apply a CSU stipulation throughout the Planning Area that requires the following to mitigate the impacts to air quality and greenhouse gas emissions: 1. All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower shall not emit more than 2 grams of NOx (mono-nitrogen oxides) per horsepower-hour. 2. All new and replacement internal combustion gas field engines of greater than 300 design-rated	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
nitrogen oxide control measures for compressor engines; BLM would require the following as a Lease Stipulation and a Condition of Approval for Applications for Permit to Drill: (1) All new and replacement internal combustion oil and gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 grams of NOx per horsepower-hour. This requirement does not apply to oil and gas field engines of less than or equal to 40 design-rated horsepower; (2) All new and replacement internal combustion oil and gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gram of NOx per horsepower-hour.	horsepower shall not emit more than 1 gram of NOx per horsepower-hour. To mitigate any potential impact mineral development emissions may have on regional ozone formation, apply a CSU stipulation across the Planning Area that requires the following minimum standards: • Drill rig engines that meet Tier II or better standards, as necessary, based on air quality conditions or projections, and consistent with the most stringent EPA emissions standards that are in force at the time of installation or approval. • Stationary internal combustion engine standard of 2g NOx/brake horsepower-hour (bhp-hr) for engines<300HP and 1g NOx/bhp-hr for engines >300 HP. • Low-bleed or no-bleed pneumatic controller. • Dehydrator Volatile Organic Compound (VOC) emission controls to +95 percent efficiency. • Tank VOC emission controls to +95 percent efficiency equivalent to NSPS subpart 0000. Apply a Lease Notice across the Planning Area to inform the lessee/operator that prior to project-specific approval, additional air quality analyses may be required to comply with the National Environmental Policy Act (NEPA), Federal Land Policy and Management Act, and/or other		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	applicable laws and regulations. Analyses may include dispersion modeling for deposition and visibility impacts analysis, control equipment determinations, and/or emission inventory development. These analyses may result in the imposition of additional project-specific air quality control measures.		
Fugitive Dust was not specifically addressed. This means that there would be no lease stipulation requiring a Fugitive Dust Control Plan, and that BMPs may not be applied to minimize dust.	Throughout the Planning Area, apply a CSU stipulation requiring a Fugitive Dust Control Plan for mineral activities that would disturb a surface area larger than 0.25 acre. Throughout the Planning Area, apply BMPs to minimize dust generated from mineral activities (see Appendix B, Best Management Practices).	Same as Alternative B.	Same as Alternative B.

Table 2–2. Cultural Resources

Alternative A	Alternative B	Alternative C	Alternative D
Objectives Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses for present and future generations. Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration or potential conflict with other resource uses by ensuring that all authorizations will comply with NHPA Section 106.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Moab: All land-disturbing activities within Traditional Cultural Properties (TCP) would be designed to avoid or minimize impacts, where reasonable. Proposed projects or actions would be modified to avoid the area or site, avoid time of use by Native American	Apply a Lease Notice throughout the Planning Area to mitigate the potential impacts to TCPs or cultural plants identified through consultation. Mitigation would be developed through further consultation with affected groups which may include measures to maintain the viewshed and intrinsic values, as well as the	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
groups, or would be eliminated altogether. *Monticello*: Protective measures would be established and implemented for sites, structures, objects, and traditional use areas that are important to tribes with historical and cultural connections to the land, in order to maintain the viewshed and intrinsic values, as well as the auditory, visual, and esthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and Native American consultation. *Moab*: Cultural plants, once identified by interested tribes, would be managed to insure that ground disturbing activities on the land do not contribute to the decline of cultural sensitive plant communities.	auditory, visual, and esthetic settings of the resources.		
Specific cultural sites were not addressed. This means that a lease stipulation to protect specific cultural sites would not be applied.	Apply an NSO stipulation for up to a 0.5 mile radius (immediate foreground) that is visible or audible from the following cultural sites or cultural concentration areas: • Upper Indian Creek (including Newspaper Rock) • Kane Creek Rock Art • Lower Kane Creek Rock Art • Muleshoe Canyon • Levi Well Rock Art • Highway 279 • Seven Mile Canyon • Bartlett Rock Art • Trout Water Rock Art • Mill Canyon	Apply an NSO stipulation for a 1-mile radius (immediate foreground) of the following cultural sites or cultural concentration areas: • Upper Indian Creek (including Newspaper Rock) • Kane Creek Rock Art • Lower Kane Creek Rock Art • Muleshoe Canyon • Levi Well Rock Art • Highway 279 • Seven Mile Canyon • Bartlett Rock Art • Trout Water Rock Art • Mill Canyon	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	• Jug Rock • Dubinky Well • Upper Hell Roaring Canyon This NSO stipulation involves 22,328 acres and is shown on Map 2-1-B/D.	• Jug Rock • Dubinky Well • Upper Hell Roaring Canyon This NSO stipulation involves 45,289 acres and is shown on Map 2-1-C.	
Cultural viewsheds were not addressed. This means that a Lease Notice requiring viewshed assessment for cultural sites may not be applied.	Apply a Lease Notice throughout the Planning Area requiring viewshed assessment for those cultural sites that receive a high degree of visitor use, or properties of traditional religious and cultural importance to an Indian Tribe. If the assessment shows that the mineral project would have adverse effects to the historic properties, the project may require relocation. The viewshed assessment would utilize the Historic Properties Visual Assessment for Effect Determination Worksheet included in Appendix C.	Same as Alternative B.	Same as Alternative B.
The potential for encountering cultural sites was not addressed. This means that a Lease Notice informing the operator that it may be more difficult or costly to exercise lease rights may not be applied.	Apply a Lease Notice to areas of high potential for cultural site occurrence, informing the lessee/operator that a higher likelihood of encountering cultural resource concerns (i.e., potential adverse effects) that may require archaeological monitoring, ethnographic data collection, data recovery and mitigation of historic properties may be required to exercise lease rights. This Lease Notice involves 136,245 acres and is shown on Map 2-2-B/C/D.	Same as Alternative B.	Same as Alternative B.

Table 2–3. Lands and Realty

Alternative A	Alternative B	Alternative C	Alternative D
Objectives Maintain generally undeveloped landscapes in the background of popular filming locations. Ensure adequate protection of the recreational value along major rivers. Protect Federal investment in scenic highways.			
Management Actions Common to All Alternatives			
To reduce surface use conflicts along the U.S. Highway 191 utility corridor within Moab Canyon, apply an NSO stipulation for mineral leasing (3,119 acres, Map 2-3-A/B/C/D).			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Apply an NSO stipulation for mineral leasing within the area of the existing Three Rivers mineral withdrawal for locatable minerals (23,441 acres, Map 2-4-A/B/D). This action would further protect the riparian, wildlife, scenic, and recreation values addressed in this withdrawal by also precluding leasable mineral operations.	Same as Alternative A.	Close the Three Rivers mineral withdrawal to mineral leasing (23,441 acres, Map 2-4-C).	Same as Alternative A.
Mineral industry use of the Needles Overlook and Anticline Overlook Roads was not addressed. This means that the use of heavy trucks on the paved Needles and Anticline Roads may not be precluded.	Apply a CSU stipulation that would preclude the use of heavy trucks (over 20 tons) on the paved Needles Overlook Road and the Anticline Overlook Road once it is paved (Map 2-5-B/C/D). These improved roads provide access for recreational use in the Canyon Rims Special Recreation Management Area. If there is no alternative to the use of these roads, allow an exception that would require bonding in sufficient amount to repair any potential damage to the improved roads resulting from the use of heavy trucks (over 20 tons) for mineral operations.	Apply a CSU stipulation that would preclude the use of heavy trucks (over 20 tons) on the paved Needles Overlook Road and Anticline Overlook Road once it is paved (Map 2-5-B/C/D). These improved roads provide access for recreational use in the Canyon Rims Special Recreation Management Area.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Moab RMP Goal: Using the Visual Resource Management (VRM) system, maintain generally undeveloped landscapes in the backgrounds of popular filming locations. This means that a lease stipulation protecting filming sites would not be applied.	Apply a CSU stipulation within 1-mile of the high use filming locations listed below. This stipulation would require a visual assessment to demonstrate that the proposed mineral operations within this area do not result in long-term impairment to the scenic quality from the filming location. These filming areas include: • Needles Overlook • Colorado River corridor and Corona Arch • Green River Canyon • Kane Creek corridor • Looking Glass Rock • View from Dead Horse Point • Potash Road/Shafer Basin (including Fossil Point) • Long Canyon • Highway 211 (including Newspaper Rock) • Highway 313 • Monitor and Merrimac/Determination Towers/Mill Canyon • Gemini Bridges • Jewell Tibbetts Arch • White Wash This CSU stipulation involves 177,594 acres and is shown on Map 2-6-B/D.	Apply an NSO stipulation within 1-mile of the high use filming locations listed below. • Needles Overlook • Colorado River corridor and Corona Arch • Green River Canyon • Kane Creek corridor • Looking Glass Rock • View from Dead Horse Point • Potash Road/Shafer Basin (including Fossil Point) • Long Canyon • Highway 211 (including Newspaper Rock) • Highway 313 • Monitor and Merrimac/Determination Towers/Mill Canyon • Gemini Bridges • Jewell Tibbetts Arch • White Wash This NSO stipulation involves 177,594 acres and is shown on Map 2-6-C.	Same as Alternative B.

Table 2–4. Lands with Wilderness Characteristics

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Objective Minimize impacts to lands determined by BLM to have wilderness characteristics.			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
No mineral leasing decisions were made to specifically protect lands identified by BLM as possessing wilderness characteristics.	Apply the Baseline CSU stipulation (see Minerals section Alternative B) to the following lands identified by BLM as having wilderness characteristics in the 2008 RMP (192,220 acres, Map 2-7-B/D): • Arches Adjacent (6,329 acres) • Behind the Rocks (1,980 acres) • Bridger Jack Mesa (23,056 acres) • Dead Horse Cliffs (760 acres) • Dome Plateau (partial, 7,124 acres) • Fisher Towers (8,590 acres) • Goldbar (7,215 acres) • Gooseneck (4,345 acres) • Hatch/Lockhart/Hart (38,802 acres) • Hatch Wash (11,064 acres) • Horsethief Point (8,321 acres) • Hunter Canyon (4,589 acres) • Indian Creek (23,148 acres) • Labyrinth Canyon (25,283 acres) • Lost Spring Canyon (11,433 acres) • Negro Bill Canyon (1,268 acres) • Shafer Canyon (1,853 acres) • Shay Mountain (6,707 acres) • Yellowbird (353 acres)	Apply the Baseline CSU stipulation (see Minerals section Alternative C) to the following lands identified by BLM as having wilderness characteristics in the 2008 RMP (192,220 acres, Map 2-7-C): • Arches Adjacent (6,329 acres) • Behind the Rocks (1,980 acres) • Bridger Jack Mesa (23,056 acres) • Dead Horse Cliffs (760 acres) • Dome Plateau (partial, 7,124 acres) • Fisher Towers (8,590 acres) • Goldbar (7,215 acres) • Gooseneck (4,345 acres) • Hatch/Lockhart/Hart (38,802 acres) • Hatch Wash (11,064 acres) • Horsethief Point (8,321 acres) • Hunter Canyon (4,589 acres) • Indian Creek (23,148 acres) • Labyrinth Canyon (25,283 acres) • Lost Spring Canyon (11,433 acres) • Negro Bill Canyon (1,268 acres) • Shafer Canyon (1,853 acres) • Shay Mountain (6,707 acres) • Yellowbird (353 acres) Apply the Baseline CSU stipulation (see Minerals section Alternative C)	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
		to the following lands identified by BLM as having wilderness characteristics subsequent to the 2008 RMP (28,240 acres, Map 2-7-C): • Dead Horse Cliffs additions (1,456 acres) • Dripping Spring (11,475 acres) • Lockhart additions (1,281 acres) • Trough Springs (7,686 acres) • Upper Indian Creek (6,342 acres)	

Table 2–5. Minerals: Oil and Gas

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objective Provide opportunities for environmentally responsible exploration and development subject to appropriate BLM policies, laws, and regulations.			
Management Actions Common To All Alternatives			
In areas where mineral activities would be incompatible with existing surface use, apply a no surface occupancy stipulation for mineral leasing. These areas are as follows: Moab Landfill (82 acres), Moab Airport (296 acres), and Dead Horse Point State Park (4,337 acres).			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Oil and Gas Lease Issuance Decisions			
These decisions involve an approach to lease issuance rather than a stipulation applied to a lease.			
No decision is in place for maximizing the size of oil and gas lease parcels. This means that there is a greater likelihood of redundant infrastructure and corridors.	The size of oil and gas lease parcels would be maximized to the extent possible. This would reduce the number of operators and thereby increase the likelihood of eliminating redundant infrastructure and corridors.	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Both oil and gas leasing and potash leasing could occur on the same tract of land. This means that there is a greater likelihood of redundant infrastructure and corridors.	**Alternative B1:** Within Potash Leasing Areas (PLA) (103,619 acres), no new oil and gas leases would be issued until potash leases and permits are relinquished, cancelled, expired, or potash production is not established within 10 years after the date of the Approved Moab MLP. **Alternative B2:** The Planning Area would be open (except for closed areas) only for oil and gas leasing subject to the appropriate leasing stipulations.	Same as Alternative B2.	Same as Alternative B1.
Oil and Gas Leasing Stipulations			
There would be no lease stipulation that would minimize surface disturbance by requiring multiple wells per pad, well pad placement, colocation of facilities, and other mitigating measures.	Apply a "Baseline CSU" stipulation in areas with sensitive resources in order to minimize the amount of surface disturbance and related impacts resulting from mineral development. These resources include the Courthouse Wash Watershed, the Salt Wash Watershed, Special Recreation Management Areas (where specified), selected lands identified by BLM as having wilderness characteristics, areas inventoried as having a high visual quality (Visual Resource Inventory [VRI] Class II that is designated as VRM Class III), bighorn sheep habitat (except a small portion in the Potash Processing Facility Areas-see below), sagebrush/steppe habitat (in areas with moderately high to very high ecological intactness), and crucial deer and elk habitat. The Baseline CSU stipulation includes a total of about 208,185 acres in Alternative B1 and 222,289 acres in Alternative B2.	Apply a "Baseline CSU" stipulation in lands identified by BLM as having wilderness characteristics, areas inventoried as having a high visual quality (VRI II Class that is designated as VRM Class III), sagebrush/steppe habitat, bighorn sheep habitat (outside of lambing, rutting, and migration habitat), and areas within crucial and substantial deer and elk habitat. The Baseline CSU stipulation includes a total of about 25,942 acres and is shown on Map 2-12-C. As compared to Alternative B, this stipulation does not apply to the Courthouse Wash Watershed, the Salt Wash Watershed and Special Recreation Management Areas (SRMA) because they are all managed as NSO. The Baseline CSU stipulation would reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat; it would consist of the following:	Apply a "Baseline CSU" stipulation in areas with sensitive resources in order to minimize the amount of surface disturbance and related impacts resulting from mineral development. These resources include the Courthouse Wash Watershed, the Salt Wash Watershed, SRMAs (where specified), selected lands identified by BLM as having wilderness characteristics, areas inventoried as having a high visual quality (VRI Class II that is designated as VRM Class III), bighorn sheep habitat (except a small portion in the Potash Processing Facility Areas-see below), sagebrush/steppe habitat (in areas with moderately high to very high ecological intactness), and crucial deer and elk habitat. The Baseline CSU stipulation includes a total of about 213,218 acres and is shown on Maps 2-12-D. The specific areas where this stipulation would be applied are also

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Baseline CSU is shown on Maps 2-12-B1 and 2-12-B2. The specific areas where this stipulation would be applied are also identified in the sections for the referenced resources. The Baseline CSU stipulation would reduce conflicts in areas with heavy recreation use, reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat; it would consist of the following: 1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart. 3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and utilities would be placed along existing roads. 4. Limit unreclaimed surface disturbance to no more than 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to well head/production facilities to minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations.	1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart. 3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and utilities would be placed along existing roads. 4. Limit un-reclaimed surface disturbance to 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations. 8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives.	identified in the sections for the referenced resources. The Baseline CSU stipulation would reduce conflicts in areas with heavy recreation use, reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat; it would consist of the following: 1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart. 3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and utilities would be placed along existing roads. 4. Limit un-reclaimed surface disturbance to no more than 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to well head/production facilities to minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations. 8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives.		alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives. An exception to the 2-mile spacing requirement would be provided as specified in Appendix A.
Potential rock falls for Porcupine Rim and Matt Martin Point and Gold Bar Rim were not specifically addressed. This means that a lease stipulation to eliminate potential rock falls would not be applied.	Apply an NSO stipulation to Porcupine Rim and Matt Martin Point and Gold Bar Rim to eliminate potential rock falls caused by mineral activities. This stipulation would require a 0.5 mile setback from the rims (6,751 acres, Map 2-14-B/D).	Apply an NSO stipulation to Porcupine Rim and Matt Martin Point and Gold Bar Rim to eliminate potential rock falls caused by mineral activities. This stipulation would require a 1.0 mile setback from the rims (9,642 acres, Map 2-14-C).	Same as Alternative B.
Moab: Leasable Minerals: On 9,855 acres of split-estate lands, BLM would apply the same lease stipulations as those applied to surrounding lands with Federal surface. Mitigation measures to protect other resource values would be developed during the appropriate site-specific environmental analysis and would be attached as conditions of approval to permits in consultation with the surface owner or surface management agency (SMA). *Monticello*: On 5,281 acres of split-estate lands, lease stipulations would consist of those necessary to comply with non-discretionary Federal laws, such as the Endangered Species Act. Mitigation measures would also be applied to protect other resource values such as VRM class, recreation, and non-Federally protected fish and wildlife species consistent with Section 6 of the standard lease terms. These mitigation measures would be	Leasable Minerals: On 15,136 acres of split-estate lands, BLM would apply the same lease stipulations as those applied to surrounding lands with Federal surface. Mitigation measures to protect other resource values would be developed during the appropriate site-specific environmental analysis and would be attached as conditions of approval to permits in consultation with the surface owner or SMA.	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
developed during site-specific environmental analysis and would be attached as conditions of approval (COA) in consultation with the surface owner or SMA.			
Approximately 210,884 acres would be open to mineral leasing, subject to standard terms and conditions. Approximately 440,356 acres would be open to mineral leasing subject to CSU and TL stipulations. Approximately 133,574 acres would be open to mineral leasing subject to a NSO stipulation. Approximately 753 acres would be closed to mineral leasing. See Map 2-15-A.	**Alternative B1:** Approximately 0 acres would be open to oil and gas leasing, subject to existing laws, regulations, and formal orders; and the terms and conditions. Approximately 228,926 acres would be open to oil and gas leasing subject to CSU and TL stipulations. Approximately 452,269 acres would be open to oil and gas leasing subject to a NSO stipulation. Approximately 753 acres would be closed to oil and gas leasing. Approximately 103,619 acres within the PLAs would be open to oil and gas leasing subject to the results of the first phase of potash leasing and development. Of these 103,619 acres, 57,620 acres would be managed with CSU and TL stipulations and 45,999 acres would be managed with an NSO stipulation. See Map 2-15-B1. **Alternative B2:** Approximately 0 acres would be open to oil and gas leasing, subject to existing laws, regulations, and formal orders; and the terms and conditions. Approximately 285,806 acres would be open to oil and gas leasing subject to CSU and TL and stipulations. Approximately 499,008 acres would be open to oil and gas leasing subject to an NSO stipulation.	Approximately 0 acres would be open to oil and gas leasing, subject to existing laws, regulations, and formal orders; and the terms and conditions. Approximately 54,799 acres would be open to oil and gas leasing subject to CSU or TL stipulations. Approximately 550,599 acres would be open to oil and gas leasing subject to an NSO stipulation. Approximately 180,169 acres would be closed to oil and gas leasing. See Map 2-15-C.	Approximately 0 acres would be open to oil and gas leasing, subject to existing laws, regulations, and formal orders; and the terms and conditions. Approximately 230,765 acres would be open to oil and gas leasing subject to CSU and TL stipulations. Approximately 305,899 acres would be open to oil and gas leasing subject to an NSO stipulation. Approximately 145,284 acres would be closed to oil and gas leasing. Approximately 103,619 acres within the PLAs would be open to oil and gas leasing subject to the results of the first phase of potash leasing and development. Of these 103,619 acres, 57,308 acres would be managed with CSU and TL stipulations and 46,311 acres would be managed with an NSO stipulation. See Map 2-15-D.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Approximately 753 acres would be closed to oil and gas leasing. See Map 2-15-B2.		
Best Management Practices			
The use of BMPs is identified for several resources in the Moab and Monticello RMPs. However, specific BMPs were not developed.	Develop BMPs as appropriate to minimize the potential resource impacts associated with mineral development (see Appendix B for a list of BMPs, by resource).	Same as Alternative B.	Same as Alternative B.

Table 2–6. Minerals: Potash

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objective Provide opportunities for environmentally responsible exploration and development subject to appropriate BLM policies, laws, and regulations.			
Management Actions Common To All Alternatives			
In areas where mineral activities would be incompatible with existing surface use, apply a no surface occupancy stipulation for mineral leasing. These areas are as follows: Moab Landfill (82 acres), Moab Airport (296 acres), and Dead Horse Point State Park (4,337 acres).			
To the extent possible, the stipulations developed for oil and gas leasing are applicable to potash leasing.			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Potash Lease Issuance Decision These decisions involve an approach to lease issuance rather than a stipulation applied to a lease.			
There is no decision to phase potash leasing. No PLAs would be established. Potash leasing could occur subject to the stipulations imposed by the RMPs.	Alternative B1: Apply a phased leasing approach to manage potash exploration and development within the Planning Area. The purposes of phased potash leasing are to minimize resource conflicts and to test the feasibility of solution mining for deep deposits of potash on public lands within the Planning Area exclusively utilizing directional and horizontal drilling technology.	Same as Alternative B2, that is: No PLAs would be established. No potash leases or permits would be issued. The Planning Area would be closed to potash leasing. The Planning Area would be open only for oil and gas leasing subject to the leasing stipulations applied in Alternative B.	Same as Alternative B1.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Phased potash leasing would provide an opportunity to issue prospecting permits and/or to lease within a specific portion of the Planning Area (identified as Potash Leasing Areas [PLAs]) in order to determine the area's production potential. Phased leasing provides an adaptive management approach so that if potash were successfully discovered and produced there would then be an opportunity to consider additional potash permitting and leasing. Potash exploration and development would be allowed only within PLAs. The BLM will not approve any application for potash prospecting permits or exploration licenses, or engage in competitive leasing. Initially PLAs include a total of about 103,619 acres and are shown on Map 2-8-B1/D. Three PLAs are initially identified in the Planning Area: Upper Ten Mile, Red Wash, and Hatch Point. Identified PLAs include blocks of public land in areas where potash leases (Upper Ten Mile) or potash permits (Red Wash and Hatch Point) have been issued. Within these areas, potash resources have been identified and the feasibility of potash production is being pursued. The Upper Ten Mile PLA includes a total of about 29,127 acres and is shown on Map 2-9-B1/D. The PLA is located in the northern portion of the Ten Mile Known Potash Leasing Area (Ten Mile KPLA). A KPLA is established where BLM has determined that a valuable deposit of		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	potash exists and leasing is done only through a competitive process. The Upper Ten Mile PLA includes lands surrounding four existing potash leases and is largely unleased for oil and gas (approximately 4.7% of the PLA is currently leased for oil and gas). The Red Wash PLA would be identified in the Red Wash area where potash prospecting permits have been issued. The Red Wash PLA would include a total of about 29, 956 acres and is shown on Map 2-10-B1/D. Potash prospecting permits are part of a noncompetitive leasing process conducted outside of KPLAs. If exploration conducted on the prospecting permits results in identifying a valuable potash deposit, then the permittee can qualify for a preference right lease. The PLA is largely unleased for oil and gas (approximately 3.7% of the PLA is currently leased for oil and gas). The Hatch Point PLA would be identified in the Hatch Point area where potash prospecting permits have been issued. The Hatch Point PLA would include a total of about 44,536 acres and is shown on Map 2-11-B1/D. Potash prospecting permits are part of a noncompetitive leasing process conducted outside of KPLAs. If exploration conducted on the prospecting permits results in identifying a valuable potash deposit and BLM determines that the lands are chiefly valuable for potash, the permittee can qualify for a preference		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	right lease. About 43 percent of the PLA is leased for oil and gas. <u>Within PLAs</u> The priority within a PLA will be to explore and develop potash deposits. New oil and gas leasing within a PLA will be considered only upon one or more of the following criteria being met: • For areas currently under an existing preference right lease or competitive lease for potash, upon relinquishment or initiation of proceedings to cancel the lease, or upon expiration of ten years from the date of the MLP ROD is signed, whichever is latest; • For areas currently subject to an existing prospecting permit or exploration license for potash, upon relinquishment, cancellation, or expiration of the prospecting permit, or rejection of an application for a preference right lease, or upon expiration of ten years from the date of the MLP ROD is signed, whichever is latest; or • The Authorized Officer determines that there are compelling reasons why oil and gas leasing would be in the public interest, and that the potential for conflict with existing or future potash exploration and development is minimal or may be minimized.		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Outside of PLAs The priority outside a PLA would be to authorize oil and gas leasing and development. New potash exploration and development would be allowed only in PLAs. Consequently, until a new PLA is identified, the BLM will not approve any application for potash prospecting permits or exploration licenses, or engage in competitive leasing. For areas outside of an existing PLA that have been designated a KPLA, the BLM will not approve exploration licenses or conduct competitive leasing unless the area is identified as a new PLA through additional decision making consistent with the procedure and criteria provided here and all other applicable law and policy. New PLAs To identify an area as a new PLA, the Authorized Officer would consider, at a minimum, the criteria listed below. In the absence of other compelling factors, the Authorized Officer will not identify an area as a new PLA unless all the following criteria are met: • There is significant interest expressed in exploring the area under consideration for potash; • There has been a sufficient level of potash production from an existing PLA identified by this MLP or adjacent areas to indicate that commercial quantities of potash may be produced in the area under consideration;		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	• The potential for conflict with existing or future oil and gas lease operations within the area under consideration is minimal or may be minimized; • The environmental impact of potash exploration and potential development within the area under consideration is consistent with all the existing laws and policies and in conformance with this land use plan amendment; and • The area under consideration has reasonable access to an identified Potash Processing Facility Area or processing can be accomplished off of BLM-administered lands. Any member of the public may petition in writing to the Authorized Officer to consider identifying a new PLA. Petitions must address all the criteria above and provide any other relevant information requested by the Authorized Officer. The Authorized Officer will identify new PLAs only after providing the public notice and opportunity to comment, consulting with Federal, State, tribal, and local stakeholders, and further decision making consistent with all applicable Federal law. <u>Removing an Area from a PLA</u> If, within a PLA, the production of commercial quantities of potash is not achieved within a 10 year time period from the date of the MLP Record of Decision is signed. The Authorized Officer may remove the		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	area from the PLA after additional decision making. In making this decision, the Authorized Officer generally will not remove an area from a PLA where: • There are any applications for or existing potash prospecting permits or exploration licenses for potash; or • There are any applications for or existing preference right leases or expressions of interest for or existing competitive potash leases. A CSU stipulation for achieving potash production in a ten year timeframe is found in the potash stipulation section below. **Alternative B2:** No PLAs would be established. No potash leases or permits would be issued. The Planning Area would be closed to potash leasing. The Planning Area would be open only for oil and gas leasing subject to the leasing stipulations applied in Alternative B.		
No PLAs would be established. Potash leasing could occur throughout the Planning Area.	**Alternative B1:** A PLA would be identified in the Upper Ten Mile area. The PLA includes a total of about 29,127 acres and is shown on Map 2-9-B1/D. The PLA is located in the northern portion of the Ten Mile KPLA. A KPLA is established where a known valuable deposit of potash is identified and leasing involves a competitive process. The PLA includes lands surrounding four	Same as Alternative B2.	Same as Alternative B1.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	existing potash leases and outside of the current Cane Creek Oil and Gas Unit boundary. **Alternative B2:** No PLAs would be established. No potash leases or permits would be issued. The Planning Area would be closed to potash leasing. The Planning Area would be open only for oil and gas leasing subject to the leasing stipulations applied in Alternative B.		
No PLAs would be established. Potash leasing would occur throughout the Planning Area.	**Alternative B1:** A PLA would be identified in the Red Wash area where potash prospecting permits have been issued. The PLA would include a total of about 29,956 acres and is shown on Map 2-10-B1/D. Potash prospecting permits are part of a noncompetitive leasing process conducted outside of KPLAs. If exploration conducted on the prospecting permits results in identifying a valuable potash deposit, then the permittee can qualify for a preference right potash lease. **Alternative B2:** No PLAs would be established. No potash leases or permits would be issued. The Planning Area would be closed to potash leasing. The Planning Area would be open only for oil and gas leasing subject to the leasing stipulations applied in Alternative B.	Same as Alternative B2.	Same as Alternative B1.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
No Potash Leasing Areas would be established. Potash leasing would occur throughout the Planning Area.	**Alternative B1:** A PLA would be identified in the Hatch Point area where potash prospecting permits have been issued. The PLA would include a total of about 44,536 acres and is shown on Map 2-11-B1/D. Potash prospecting permits are part of a noncompetitive leasing process conducted outside of KPLAs. If exploration conducted on the prospecting permits results in identifying a valuable potash deposit, then the permittee can qualify for a preference right potash lease. **Alternative B2:** No PLAs would be established. No potash leases or permits would be issued. The Planning Area would be closed to potash leasing. The Planning Area would be open only for oil and gas leasing subject to the leasing stipulations applied in Alternative B.	Same as Alternative B2.	Same as Alternative B1.
Potash Leasing Stipulations			
No specific leasing stipulation would be imposed regarding potash production.	Alternative B1: CSU stipulation for Potash Prospecting Permits, Preference Right Leases, and Competitive Leases: All new potash leases, as well as all potash leases subject to readjustment would be subject to the following diligent development requirements: The Authorized Officer would pursue lease cancellation if after ten years from the date of lease issuance, potassium or related products are not	Same as B2.	Same as B1.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	being produced in paying quantities from: a. The lease; or b. The contiguous mining block; or c. When the gross value of the potassium compounds and other related products produced from the lease or the contiguous mining block at the point of shipment to market does not yield a return in excess of all direct and indirect operating costs allocable to their production. The Authorized Officer may grant an extension of the diligent development period in the event of delays in the permitting process that were unforeseen, that were in no way attributable to the lessee or operator, and that could not be readily accommodated in the normal course of business by a prudent lessee or operator. In addition, all potash prospecting permits would include a stipulation that, if a preference right lease is ultimately issued, it would include the diligent development stipulation above. Alternative B2: The Planning Area would be closed to potash leasing. Therefore, no stipulation for achieving potash production would be necessary.		
There would be no lease stipulation that would minimize surface disturbance by requiring multiple	Apply a “Baseline CSU” stipulation in areas with sensitive resources in order to minimize the amount of	Apply a “Baseline CSU” stipulation in lands identified by the BLM as having wilderness characteristics, areas	Apply a “Baseline CSU” stipulation in areas with sensitive resources in order to minimize the amount of

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
wells per pad, well pad placement, colocation of facilities, and other mitigating measures.	surface disturbance and related impacts resulting from mineral development. These resources include the Courthouse Wash Watershed, the Salt Wash Watershed, Special Recreation Management Areas (where specified), selected lands identified by BLM as having wilderness characteristics~~,~~ areas inventoried as having a high visual quality (VRI Class II that is designated as VRM Class III), bighorn sheep habitat (except a small portion in the Potash Processing Facility Areas - see below), sagebrush/steppe habitat (in areas with moderately high to very high ecological intactness), and crucial deer and elk habitat. The Baseline CSU stipulation includes a total of about 208,185 acres in Alternative B1 and 222,289 acres in Alternative B2. Baseline CSU is shown on Maps 2-12-B1 and 2-12-B2. The specific areas where this stipulation would be applied are also identified in the sections for the referenced resources. The Baseline CSU stipulation would reduce conflicts in areas with heavy recreation use, reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat; it would consist of the following: 1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart.	inventoried as having a high visual quality (VRI II Class that is designated as VRM Class III), sagebrush/steppe habitat, bighorn sheep habitat (outside of lambing, rutting, and migration habitat), and areas within crucial and substantial deer and elk habitat. The Baseline CSU stipulation includes a total of about 25,942 acres and is shown on Map 2-12-C. As compared to Alternative B, this stipulation does not apply to the Courthouse Wash Watershed, the Salt Wash Watershed and SRMAs because they are all managed as NSO. The Baseline CSU stipulation would reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat and consists of the following: The Baseline CSU stipulation would include the following requirements: 1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart. 3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and utilities would be placed along existing roads. 4. Limit un-reclaimed surface disturbance to 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to	surface disturbance and related impacts resulting from mineral development. These resources include the Courthouse Wash Watershed, the Salt Wash Watershed, Special Recreation Management Areas (where specified), selected lands identified by BLM as having wilderness characteristics~~,~~ areas inventoried as having a high visual quality (VRI Class II that is designated as VRM Class III), bighorn sheep habitat (except a small portion in the Potash Processing Facility Areas-see below), sagebrush/steppe habitat (in areas with moderately high to very high ecological intactness), and crucial deer and elk habitat. The Baseline CSU stipulation includes a total of about 213,218 acres and is shown on Map 2-12-D. The specific areas where this stipulation would be applied are also identified in the sections for the referenced resources. The Baseline CSU stipulation would reduce conflicts in areas with heavy recreation use, reduce the impacts to wilderness values, reduce visual intrusions, and reduce loss of wildlife habitat; it would consist of the following: 1. Multiple wells per pad as appropriate. 2. Well pads would be placed no closer than 2-miles apart. 3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	3. Production facilities would be co-located and designed to minimize surface impacts. Pipelines and utilities would be placed along existing roads. 4. Limit unreclaimed surface disturbance to no more than 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to well head/production facilities to minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations. 8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives.	minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations. 8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives.	utilities would be placed along existing roads. 4. Limit unreclaimed surface disturbance to no more than 15 acres per well pad, including associated facilities, roads, pipelines, and utilities. 5. Extensive interim reclamation of roadway disturbance and reclamation of well pads to well head/production facilities to minimize long-term surface disturbance. 6. Final reclamation fully restoring the original landform. Travel routes would be restored to their original character. 7. This stipulation would allow for geophysical operations. 8. Compensatory mitigation outside the area of impact could be required to offset impacts to resources when onsite mitigation alone may not be sufficient to adequately mitigate impacts and achieve BLM resource objectives.
PPFAs were not addressed. This means that potash processing facilities would be allowed throughout that portion of the Planning Area not managed with an NSO stipulation,	**Alternative B1:** Apply a CSU stipulation to all potash leases that requires processing facilities to be located within a PPFA. The PPFAs involve 42,492 acres and are shown on Map 2-13-B1/D. Potash processing facilities can require a substantial commitment of public lands. Therefore, these facilities would be located in areas	Same as Alternative B2.	Same as Alternative B1 but with an exception as specified in Appendix A.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	that have a minimal potential for resource conflicts. PPFAs would be identified based on the following criteria: 1. Located outside an SRMA with the exception of the Dee Pass Motorized Focus area within the Labyrinth Rims/Gemini Bridges SRMA and the Canyon Rims SRMA. 2. Located outside of VRI II And VRM Class II areas along Highway 191. 3. Located only in VRM Class III or IV areas. 4. Located outside of desert bighorn lambing, rutting, and migration habitat. 5. Located outside of deer or elk crucial habitat. 6. Located in lands that have low levels of ecological intactness. 7. Located in areas within reasonable proximity to PLAs. This stipulation would avoid widespread impacts to recreation, visual resources, crucial deer and elk habitat, bighorn habitat, and ecologically intact lands that could result from the construction of large potash facilities. PPFAs are those areas that are not within the Baseline CSU stipulation and are not managed with an NSO stipulation (with the exception of ephemeral streams) or closed. As part of this CSU stipulation, compensatory mitigation outside the area of impact would be required to off-set the impacts of		

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	potash processing facility construction. Apply BMPs for potash processing facilities. **Alternative B2:** No potash processing facility areas would be identified.		
Approximately 210,884 acres would be open to mineral leasing, subject to standard terms and conditions. Approximately 440,356 acres would be open to mineral leasing subject to CSU and TL stipulations. Approximately 133,574 acres would be open to mineral leasing subject to an NSO stipulation. Approximately 753 acres would be closed to mineral leasing. See Map 2-16-A.	**Alternative B1:** Approximately 0 acres within PLAs are open for potash leasing, subject to existing laws, regulations, and standard terms and conditions. Approximately 57,620 acres within PLAs are open for potash leasing subject to CSU and TL stipulations. Approximately 45,999 acres within PLAs are open for potash leasing subject to an NSO stipulation. Approximately 681,195 acres outside PLAs are open subject to the results of the first phase of potash leasing within the PLAs. Of these 681,195 acres, 228,926 acres would be managed with CSU and TL stipulations and 452,269 acres would be managed with an NSO stipulation. See Map 2-16-B1. **Alternative B2:** Approximately 785,567 acres are closed to potash leasing. See Map 2-16-B2/C.	Approximately 785,567 acres are closed to potash leasing. See Map 2-16-B2/C.	Approximately 0 acres within PLAs are open for potash leasing, subject to existing laws, regulations, and standard terms and conditions. Approximately 57,308 acres within PLAs are open for potash leasing subject to CSU and TL stipulations. Approximately 46,311 acres within PLAs are open for potash leasing subject to an NSO stipulation. Approximately 536,664 acres outside PLAs are open subject to the results of the first phase of potash leasing within the PLAs. Of these 536,664 acres, 230,765 acres would be managed with CSU and TL stipulations and 305,899 acres would be managed with an NSO stipulation. See Map 2-16-D.
Best Management Practices			
The use of BMPs is identified for several resources in the Moab and Monticello RMPs. However, specific BMPs were not developed.	Apply BMPs as appropriate to minimize the potential resource impacts associated with mineral development (see Appendix B for a list of BMPs, by resource).	Same as Alternative B.	Same as Alternative B.

Table 2–7. Natural Areas

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objectives Protect, preserve, and maintain wilderness characteristics of Natural Areas. Manage these lands and backcountry landscapes for their undeveloped character and to provide opportunities for primitive recreational activities and experiences of solitude.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Apply an NSO stipulation for mineral leasing to lands managed as Natural Areas (429 acres, Map 2-17-A/B/C/D).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table 2–8. Paleontology

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Objective Protect paleontological resources from surface-disturbing activities.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Moab: Attach lease notices, stipulations, and other requirements to permitted activities to prevent damage to paleontological resources. *Monticello*: Conduct onsite evaluation of surface-disturbing activities for all Class 5 areas and minimize impacts to paleontological resources to the degree practicable. Evaluation would consider the type of surface disturbance proposed and mitigation would be developed based on site-specific information.	Apply a CSU stipulation requiring survey and monitoring for all surface-disturbing mineral activities in potential fossil yield classification (PFYC) areas 4 and 5 (118,952 acres, Map 2-18-B/D). Where monitoring encounters vertebrate and vertebrate trace fossils during mineral operations, all operations must cease until the BLM Authorized Officer determines whether the site can be avoided, protected, or must be fully excavated.	Apply a CSU stipulation requiring survey and monitoring for all disturbing surface mineral activities in potential fossil yield classification (PFYC) areas 3, 4, and 5 (265,689 acres, Map 2-18-C). Where monitoring encounters vertebrate and vertebrate trace fossils during mineral operations, all operations must cease until the BLM Authorized Officer determines whether the site can be avoided, protected, or must be fully excavated.	Same as Alternative B.

Table 2–9. Recreation

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objective To provide for multiple recreational uses of the public lands and sustain a wide-range of recreation opportunities and potential experiences for visitors and residents, while supporting local economic stability and sustaining the recreation resource base and sensitive resource values.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Moab: Apply an NSO stipulation for mineral leasing within 0.5 miles of developed recreation sites (24,311 acres, Map 2-19-A/D). See a list of developed recreation sites, both current and planned in Appendix D.	Apply an NSO stipulation for a 1-mile radius from developed recreation site boundaries (as listed in Appendix D) to provide auditory and visual protection to the immediate foreground (71,108 acres, Map 2-19-B).	Apply an NSO stipulation for a 2-mile radius from developed recreation site boundaries (as listed in Appendix D) to provide auditory and visual protection to the immediate foreground (191,584 acres, Map 2-19-C).	Same as Alternative A, but with an exception, modification, and waiver as specified in Appendix A.
Protection of recreation routes and trails were not specifically addressed. This means that a lease stipulation providing visual and auditory protection along recreation routes would not be applied.	Apply an NSO stipulation for mineral leasing within 0.5 miles of the centerline of the following high use routes (motorized) and trails (non-motorized) to provide visual and auditory protection to the immediate foreground: • Klondike Bluffs bicycle trails • Bar M bicycle trails • Porcupine Rim trail • Magnificent Seven/7 Up bicycle trail systems • Ahab bicycle trails • Lower Monitor and Merrimac bike trail • Kokopelli's Trail • Hunter Canyon hiking trail • Metal Masher (Arth's Rim) jeep route • Gold Bar Rim jeep route • Golden Spike jeep route • Poison Spider jeep route • Cliffhanger jeep route • Chicken Corners jeep route	Apply an NSO stipulation for mineral leasing within 1-mile of the centerline of the following high and moderate use routes (motorized) and trails (non-motorized) to provide visual or auditory protection to the immediate foreground: • Klondike Bluffs bicycle trails • Bar M bicycle trails • Porcupine Rim trail • Magnificent Seven/7 Up bicycle trail systems • Ahab bicycle trails • Lower Monitor and Merrimac bike trail • Kokopelli's Trail • Hunter Canyon hiking trail • Metal Masher (Arth's Rim) jeep route • Gold Bar Rim jeep route • Golden Spike jeep route • Poison Spider jeep route • Cliffhanger jeep route • Chicken Corners jeep route	Same as Alternative B, but with an exception as specified in Appendix A. See Map 2-20-B/D (95,143 acres).

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	• Top of the World jeep route • Moab Rim jeep route • Kane Creek jeep route • Lockhart jeep route • Seven Mile Rim jeep route See Map 20-B/D (95,143 acres).	• Top of the World jeep route • Moab Rim jeep route • Behind the Rocks jeep route • Kane Creek jeep route • Lockhart jeep route • Seven Mile Rim jeep route • Secret Spire jeep route • Jug Rock Equestrian Trail System • Jewel Tibbets hiking trail • Trough Springs hiking trail See Map 2-20-C (211,057 acres).	
Climbing and canyoneering areas were not specifically addressed. This means that a lease stipulation providing visual and auditory protection to climbing and canyoneering areas would not be applied.	Apply an NSO stipulation for a 0.5 mile radius around high use climbing and canyoneering areas (Map 2-21-B/D, 22,575 acres) to provide visual and auditory protection to the immediate foreground: • Indian Creek • Wall Street • Ice Cream Parlor • The Tombstones of Kane Creek • Needle Rock • Cameltoe Canyon • Granary Canyon • Rock of Ages • Repeat Junior • Winter Camp Slot	Apply an NSO stipulation for a 1-mile radius around high and moderate use climbing and canyoneering areas (Map 2-21-C, 64,506 acres) to provide visual and auditory protection to the immediate foreground: • Indian Creek • Wall Street • Ice Cream Parlor • The Tombstones of Kane Creek • Needle Rock • Long Canyon/Day Canyon/Culvert Canyon • Cameltoe Canyon • Granary Canyon • Rock of Ages • Repeat Junior • Winter Camp Slot	Same as Alternative B, but with an exception as specified in Appendix A. See Map 2-21-B/D (22,575 acres).
Canyon Rims SRMA Manage the Canyon Rims SRMA (101,520 acres) as a Destination SRMA.	**Canyon Rims SRMA** Apply an NSO stipulation to all VRM Class II areas in the Canyon Rims SRMA, as well as to all lands on the west side of the Anticline Road	**Canyon Rims SRMA** Apply an NSO stipulation to the entire Canyon Rims SRMA (101,520 acres, Map 2-22-C).	**Canyon Rims SRMA** Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
The Canyon Rims SRMA includes the following Focus Areas: • Hatch Wash Hiking and Backpacking Focus Area (3,614 acres) • Needles and Anticline Roads Focus Area (Utah Scenic Backways) Mineral leasing decisions were not specifically imposed by the establishment of the Canyon Rims SRMA. The stipulations that are in place were the result of other resource decisions.	(42,676 acres). This includes the VRM Class II corridor along the Needles and Anticline Overlook roads. Apply a NSO stipulation to the Hatch Wash Hiking and Backpacking Focus Area (3,614 acres). Apply the Baseline CSU stipulation (see Minerals section Alternative B) throughout the remainder of the SRMA (55,230 acres, Map 2-22-B/D).		
Colorado Riverway SRMA Colorado Riverway SRMA will be established as a Destination SRMA (31,702 acres of the 89,936 total SRMA acres are within the Planning Area area). Mineral leasing decisions were not specifically imposed by the establishment of the Colorado Riverway SRMA. The stipulations that are in place were the result of other resource decisions.	**Colorado Riverway SRMA** Apply an NSO stipulation to the entire Colorado Riverway SRMA within the Planning Area (31,702 acres, Map 2-23-B/C/D).	**Colorado Riverway SRMA** Same as Alternative B.	**Colorado Riverway SRMA** Same as Alternative B.
Dolores River Canyons SRMA Manage as an undeveloped SRMA (2,872 acres of the 31,661 total SRMA acres are within the Planning Area). Mineral leasing decisions were not specifically imposed by the establishment of the Dolores River Canyons SRMA. The stipulations that are in place were the result of other resource decisions.	**Dolores River Canyons SRMA** Apply an NSO stipulation to the Dolores River Canyons SRMA within the Planning Area (2,872 acres, Map 2-24-B/C/D).	**Dolores River Canyons SRMA** Same as Alternative B.	**Dolores River Canyons SRMA** Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Indian Creek SRMA Mineral leasing decisions were not specifically imposed by the establishment of the Indian Creek SRMA (76,427 acres). The stipulations that are in place were the result of other resource decisions.	**Indian Creek SRMA** Apply an NSO stipulation to the Indian Creek SRMA. See Map 2-25-B/C/D (76,427 acres).	**Indian Creek SRMA** Same as Alternative B.	**Indian Creek SRMA** Same as Alternative B.
Labyrinth Rims/Gemini Bridges SRMA Manage as a Destination SRMA (275,788 acres of the 300,650 total SRMA acres are within the Planning Area). Focus Areas within this SRMA are: • Airport Hills Motocross Focus Area (290 acres) • Bar M Mountain Biking Focus Area (2,906 acres) • Bartlett Slickrock Freeride Mountain Bike Focus Area (166 acres) • Dee Pass Motorized Trail Focus Area (21,158 acres) • Gemini Bridges/Poison Spider Mesa Focus Area (16,589 acres) • Goldbar/Corona Arch Hiking Focus Areas (4,773 acres) • Klondike Bluffs Mountain Biking Focus Area (14,597 acres) • Labyrinth Canyon Canoe Focus Area (6,812 acres) • Mill Canyon/Upper Courthouse Mountain Biking Focus Area (5,741 acres) • Mineral Canyon/Horsethief Point Competitive BASE Jumping Focus Area (762 acres)	**Labyrinth Rims/Gemini Bridges SRMA** Apply an NSO stipulation to the following Focus Areas within the Planning Area (54,255 acres, Map 2-26-B/D): • Bar M Mountain Biking Focus Area (2,906 acres) • Bartlett Slickrock Freeride Mountain Bike Focus Area (166 acres) • Gemini Bridges/Poison Spider Mesa Focus Area (16,589 acres) • Goldbar/Corona Arch Hiking Focus Areas (4,773 acres) • Klondike Bluffs Mountain Biking Focus Area (14,597 acres) • Labyrinth Canyon Canoe Focus Area (6,812 acres) • Mill Canyon/Upper Courthouse Mountain Biking Focus Area (5,741 acres) • Mineral Canyon/Horsethief Point Competitive BASE Jumping Focus Area (762 acres) • Seven Mile Canyons Equestrian Focus Area (1,028 acres) • Spring Canyon Hiking Focus Area (455 acres) • Tusher Slickrock Mountain Biking Focus Area (428 acres)	**Labyrinth Rims/Gemini Bridges SRMA** Apply an NSO stipulation to the entire Labyrinth Rims/Gemini Bridges SRMA that is within the Planning Area (275,788 acres, Map 2-26-C).	**Labyrinth Rims/Gemini Bridges SRMA** Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
• Seven Mile Canyons Equestrian Focus Area (1,028 acres) • Spring Canyon Hiking Focus Area (455 acres) • Tusher Slickrock Mountain Biking Focus Area (428 acres) • White Wash Sand Dunes Open OHV Focus Area, (1,944 acres) Apply an NSO stipulation for mineral leasing within the Goldbar/Corona Area Focus Area to protect primitive hiking opportunities and scenic values. Except for the Goldbar/Corona Arch Focus Area, mineral leasing decisions were not specifically imposed by the establishment of the Labyrinth Rims/Gemini Bridges SRMA. The stipulations that are in place were the result of other resource decisions.	Apply the Baseline CSU to the remainder of the SRMA outside of the Focus Areas (see Minerals section Alternative B).		
South Moab SRMA Manage as a Destination SRMA (23,143 acres of the 63,999 total SRMA acres are within the Planning Area. Focus Areas within this SRMA are: • Behind the Rocks Hiking Focus Area (4,076 acres) • 24 Hours of Moab Focus Area (2,914 acres) Mineral leasing decisions were not specifically imposed by the establishment of the South Moab SRMA. The stipulations that are in place were the result of other resource decisions.	**South Moab SRMA** Apply an NSO stipulation to the two Focus Areas within the SRMA (6,990 acres, Map 2-27-B/C). The Focus Areas are: • Behind the Rocks Hiking Focus Area (4,076 acres) • 24 Hours of Moab Mountain Biking Focus Area (2,914 acres) Apply the Baseline CSU stipulation throughout the remainder of the SRMA outside of the Focus Areas (see Minerals section Alternative B).	**South Moab SRMA** Apply an NSO stipulation to the entire South Moab SRMA that is within the Planning Area (23,143 acres, Map 2-27-C).	**South Moab SRMA** Same as Alternative B.

Table 2–10. Riparian Resources

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objectives Manage soil, water, and riparian resources to enhance ecosystem health and provide for public uses. Avoid or minimize the disturbance, loss, or degradation of soil, surface and groundwater resources, riparian areas, wetlands and associated floodplains.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Apply an NSO stipulation within public water reserves, 100-year floodplains, and within 330 feet of riparian areas and springs (50,495 acres, Map 2-34-A).	Apply an NSO stipulation to preclude mineral activities within public water reserves, 100-year floodplains and within 500 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, water wells, and springs (69,786 acres, Map 2-34-B/D).	Apply an NSO stipulation to preclude mineral activities within public water reserves, 100-year floodplains and within 660 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, water wells, and springs (91,558 acres, Map 2-34-C).	Same as Alternative B.

Table 2–11. Soil and Water

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objectives Manage soil, water, and riparian resources to enhance ecosystem health and provide for public uses. Avoid or minimize the disturbance, loss, or degradation of soil, surface and groundwater resources, riparian areas, wetlands and associated floodplains.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Soil			
Saline Soils: To minimize watershed damage on saline soils which are primarily in the Mancos Shale, apply a TL stipulation for mineral leasing prohibiting surface-disturbing activities on 68,275 acres (Map 2-28-A/B2/C) of moderately to highly saline soils from December 1 to May 31. This restriction includes road construction	**Alternative B1:** Same as A, except do not apply a TL within PPFAs. See Map 2-28-B1/D (49,915 acres). A TL would not be applied to PPFAs in order to allow for the practical construction and operation of the facilities. Apply a CSU stipulation within PPFAs requiring compensatory mitigation outside the area of impact for any surface disturbance on saline	Same as Alternative A.	Same as Alternative B1.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
and traffic on existing roads associated with drilling operations.	soils (18,360 acres, Map 2-29-B1/D). One acre of rehabilitation, or an amount to be determined of an equal value to the impacted resource, would be required for each acre of disturbance. Compensatory mitigation outside the area of impact could include: 1) reclamation of non-designated roads and 2) planting and seeding in appropriate areas to improve soil condition. **Alternative B2:** Same as Alternative A.		
Manage public lands in a manner consistent with the Colorado River Salinity Control Program including implementing BMPs. *Moab*: Develop BMPs for activities on saline and other sensitive soils. *Monticello*: Any proposed activities that would be located in sensitive soils (e.g., hydric, saline, gypsiferous, or highly erodible soils), would incorporate BMPs and other mitigation measures to minimize soil erosion and maintain soil stability. Site-specific mitigation measures and other additional mitigation measures required to protect soil resources and maintain soil productivity, would be determined in site-specific NEPA analysis.	Due to the difficulty of reclaiming saline soils, apply a CSU stipulation requiring compensatory mitigation outside the area of impact for any surface disturbance on saline soils (68,348 acres, Map 2-30-B/C/D). One acre of rehabilitation, or an amount to be determined of an equal value to the impacted resource, would be required for each acre of disturbance. Compensatory mitigation outside the area of impact could include: 1) reclamation of non-designated roads and 2) planting and seeding in appropriate areas to improve soil condition. Apply BMPs for soils (Appendix B).	Same as Alternative B.	Same as Alternative B.
Apply environmental BMPs to all oil and gas authorizations in accordance to WO IM 2007-021 and the most current version of the "*Goldbook*."	Apply BMPs from Appendix B.	Same as Alternative B.	Same as Alternative B.
Develop BMPs to address health and safety concerns associated with blowing dust along U.S. 191 and I-70.	Throughout the Planning Area, apply BMPs to reduce fugitive dust emissions (see Appendix B).	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Soils with high to moderate wind erosion ratings are shown on Map 2-31 B/C/D.		
Moab: Apply a controlled surface use stipulation for mineral leasing on slopes greater than 30 percent (79,045 acres). *Monticello*: If surface-disturbing activities cannot be avoided on slopes between 21 percent and 40 percent, an erosion control plan would be required (29,150 acres). The plan must be approved by BLM prior to construction and maintenance and include the following: 1. An erosion control strategy. 2. A BLM accepted and/or approved survey and design. *Monticello*: For slopes greater than 40 percent, no surface disturbance is allowed unless it is determined that it would cause undue or unnecessary degradation to pursue other placement alternatives (42,339 acres). An erosion control plan is required. See Map 2-32-A (150,534 acres).	Slopes over 21 percent should be avoided wherever possible. Apply a CSU stipulation for activities on slopes over 21 percent (181,119 acres, Map 2-32-B/D). This stipulation would require an erosion control plan approved by the BLM prior to construction and maintenance. The plan would include the following: 1) an erosion control strategy and 2) a BLM-accepted survey and design.	Slopes over 21 percent should be avoided wherever possible Apply a CSU stipulation for activities on slopes between 21 percent and 30 percent (46,525 acres). This stipulation would require an erosion control plan approved by the BLM prior to construction and maintenance. The plan would include the following: 1) an erosion control strategy and 2) a BLM-accepted survey and design. Apply an NSO stipulation for slopes over 30 percent (134,594 acres). See Map 2-32-C.	Same as Alternative B.
Water			
Moab: BLM would work with partners to implement BMPs and continue BLM's cooperative work with the Utah Divisions of Water Rights and Water Quality in accordance with the administrative memorandum of understanding (MOU) and the cooperative agreement addressing water quality monitoring.	BLM would take appropriate actions to maintain water quality by working with the Utah Division of Water Quality and other agencies in accordance with the MOU regarding implementing the nonpoint source water quality program in the State of Utah. This MOU addresses the development of monitoring data and BMPs to protect water resources.	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Monticello: The BLM would take appropriate actions to maintain water quality in streams within Monticello Planning Area to meet State and Federal water quality standards, including designated beneficial uses and anti-degradation requirements. *Monticello*: Modify the BMPs as appropriate to meet water quality standards and maintain watershed function in Indian Creek.	The BLM would meet State and Federal water quality standards, including designated beneficial uses and anti-degradation requirements Apply BMPs for water provided in Appendix B, including those for potash processing facilities.		
Drinking Water Source Protection Zones (Groundwater Protection Zones as defined by EPA) were not specifically addressed This means that a lease stipulation protecting Drinking Water Source Protection Zones would not be applied.	Apply an NSO stipulation to Drinking Water Source Protection Zones (Groundwater Protection Zones) 1, 2, and 3, and 4 as defined by the Utah Division of Drinking Water (17,362 acres, Map 2-33-B/C/D). This stipulation would include a requirement for not penetrating the water bearing geologic units (aquifer) within the protection zone where horizontal and directional drilling is conducted from areas outside the NSO. This stipulation would also include a requirement for adequate well construction, completion, and abandonment where horizontal and directional drilling is conducted from areas adjacent to the NSO area so that source water is not impacted.	Same as Alternative B.	Same as Alternative B.
Water resources along ephemeral streams were not specifically addressed. This means that a lease stipulation along ephemeral streams would not be applied.	Apply an NSO stipulation to preclude mineral activities within 100 feet of ephemeral streams (58,545 acres, Map 2-35-B/D).	Apply an NSO stipulation to preclude mineral activities within 200 feet of ephemeral streams (115,121 acres, Map 2-35-C).	Same as Alternative B.
Water bodies not meeting Utah water quality standards were not specifically addressed. This means that a lease stipulation protecting	Currently the Colorado River and Fisher Creek are the only water bodies in the Planning Area that are determined to be impaired and not meeting State water quality	Apply an NSO stipulation to preclude mineral activities within 1,000 feet of the Colorado River and Fisher Creek (6,883 acres, Map 2-36-C).	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
impaired waters would not be applied.	standards. Apply an NSO stipulation to preclude mineral activities within 750 feet of the Colorado River and Fisher Creek (4,590 acres, Map 2-36-B/D).		
BMPs for water protection were not specified.	Apply BMPs to drilling operations for the protection of surface and groundwater resources (Appendix B).	Same as Alternative B.	Same as Alternative B.
Courthouse Wash Watershed was not specifically addressed. This means that a lease stipulation would not be applied to protect this watershed	To protect the Courthouse Wash Watershed (51,790 acres, Map 2-37-B/D), an important recharge area for the unique ecological system within Arches National Park, apply the Baseline CSU stipulation (see Minerals section Alternative B) to limit the amount of drilling within the groundwater recharge area. Apply an additional CSU stipulation to the Courthouse Watershed that requires the use of closed loop drilling, the use of tanks for produced water or backflow water, and a water monitoring plan. Monitoring will occur prior to, during, and after anticipated mineral development to detect impacts on both surface water and groundwater resources.	Apply an NSO stipulation to the Courthouse Wash Watershed (51,790 acres, Map 2-37-C). This stipulation would include a requirement for not penetrating the water source where horizontal and directional drilling is conducted from areas adjacent to the NSO.	Same as Alternative B.
Salt Wash watershed was not specifically addressed. This means that a lease stipulation would not be applied to protect this watershed.	To protect the Salt Wash Watershed, an important watershed which drains through Arches National Park (61,925 acres, Map 2-38-B/D), apply the Baseline CSU stipulation (see Minerals section Alternative B) to limit the amount of drilling within the watershed.	Apply an NSO stipulation to the Salt Wash Watershed (61,925 acres, Map 2-38-C). This stipulation would include a requirement for not penetrating the water source where horizontal and directional drilling is conducted from areas adjacent to the NSO.	Same as Alternative B.
Spring areas, were not specifically addressed. This means that a lease stipulation requiring a hydrologic	Apply a CSU stipulation to identified spring areas requiring a hydrologic assessment prior to conducting any mineral operations (38,056 acres,	Apply an NSO stipulation to identified spring areas (38,056 acres, Map 2-39-C).	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
assessment or water monitoring plan would not be required.	Map 2-39-B/D). The hydrologic assessment would include a description of the geology and potentially affected aquifers and springs along with a drilling plan that demonstrates how water resources would be protected. This stipulation would also require a water monitoring plan. Monitoring will occur prior to, during, and after anticipated mineral development to detect impacts on springs.		
Shallow aquifers and potential unconsolidated aquifers were not addressed. This means that BMPs may not be applied to protect shallow aquifers and potential unconsolidated aquifers.	Apply BMPs for the protection of shallow aquifers and potential unconsolidated aquifers.	Same as Alternative B.	Same as Alternative B.
Apply an NSO stipulation within public water reserves, 100-year floodplains, and within 330 feet of riparian areas and springs (50,495 acres, Map 2-34-A).	Apply an NSO stipulation to preclude mineral activities within public water reserves, 100 year floodplains and within 500 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, water wells, and springs (69,786 acres, Map 2-34-B/D).	Apply an NSO stipulation to preclude mineral activities within public water reserves, 100 year floodplains and within 660 feet of intermittent and perennial streams, rivers, riparian areas, wetlands, water wells, and springs (91,558 acres, Map 2-34-C).	Same as Alternative B.

Table 2–12. Special Designations

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Special Designations: Areas of Critical Environmental Concern (ACEC)			
Objective Manage ACECs to protect and prevent damage to the relevant and important values such as historic, cultural, scenic, fish and wildlife, and natural systems or processes.			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Apply an NSO stipulation to the Behind the Rocks ACEC (3,911 acres, Map 2-40-A/B/D).	Same as Alternative A.	Close the Behind the Rocks ACEC to mineral leasing (3,911 acres, Map 2-40-C).	Same as Alternative A.
Apply an NSO stipulation to the Highway 279/Shafer Basin/Long Canyon ACEC (12,626 acres, Map 2-41-A/B).	Same as Alternative A.	Close the Highway 279/Shafer Basin/Long Canyon ACEC (12,626 acres, Map 2-41-C) to mineral leasing.	Close Shafer Basin portion of the Highway 279/Shafer Basin/Long Canyon ACEC to mineral leasing (8,566 acres, Map 2-41-D). Apply an NSO stipulation to the Highway 279 and Long Canyon portions of the Highway 279/Shafer Basin/Long Canyon ACEC to mineral leasing (4,060 acres, Map 2-41-D).
Apply an NSO stipulation to the Indian Creek ACEC (3,894 acres, Map 2-42-A/B).	Same as Alternative A.	Close the Indian Creek ACEC to mineral leasing (3,894 acres, Map 2-42-C/D).	Same as Alternative C.
Apply an NSO stipulation to the Lavender Mesa ACEC (649 acres, Map 2-43-A/B/C).	Same as Alternative A.	Close the Lavender Mesa ACEC to mineral leasing (649 acres, Map 2-43-C).	Same as Alternative A.
Apply an NSO stipulation to the Shay Canyon ACEC (119 acres, Map 2-44-A/B/D).	Same as Alternative A.	Close the Shay Canyon ACEC to mineral leasing (119 acres, Map 2-44-C).	Same as Alternative A.
Apply an NSO stipulation to the Ten Mile Wash ACEC (4,988 acres, Map 2-45-A/B/D).	Same as Alternative A.	Close the Ten Mile Wash ACEC to mineral leasing (4,988 acres, Map 2-45-C).	Same as Alternative A.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Special Designations: National Historic Trails – Old Spanish National Historic Trail and Scenic Backways and Byways			
Objective Preserve the integrity of intact landscapes along the Old Spanish National Historic Trail (OSNHT) on public lands within the Planning Area (28.8 miles).			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Segments of the OSNHT will be identified and classified for historic integrity and condition. These segments will then be designated for appropriate types of management and travel. Consider plan amendment, as necessary, to incorporate provisions of the forthcoming Old Spanish National Historic Trail Comprehensive Management Plan.	In order to protect the integrity of viewsheds in scenic and cultural landscapes along the OSNHT, apply a CSU stipulation to moderate value sites along the OSNHT. The CSU would apply to a 2-mile width on both sides of a 2.46 mile segment of the OSNHT where the resource condition is Category II, location verified and evident with minor alteration (22,181 acres, Map 2-46-B/D). The CSU would require the lessee to maintain the moderate setting of the trail at these locations based on a visual assessment. There are no resource condition Category I (location verified, evident, and unaltered) segments within the Planning Area.	Apply an NSO stipulation along the Congressionally Designated OSNHT (28.8 miles). The NSO would apply to a 2-mile width on both sides of the OSNHT (71,439 acres, Map 2-46-C).	Same as Alternative B.
Scenic driving corridors will be designated as VRM Class II within a specified viewshed not to exceed 0.5 miles from centerline (44,953 acres, Map 2-58-A). Apply a controlled surface use stipulation for mineral leasing within 0.5 miles of scenic driving corridors.	Apply an NSO stipulation to the mapped viewshed of Scenic Backways and Byways designated by the State of Utah. This stipulation shall not exceed 1-mile from centerline (156,067 acres, Map 2-58-B/D). These scenic corridors include: Utah Highway 128, Highway 211, Highway 279, Highway 313, the Needles Overlook Road, the Anticline Overlook Road, and the Lockhart Basin Road (including the Kane Creek Road).	Apply an NSO stipulation to the mapped viewshed of Scenic Backways and Byways designated by the State of Utah. This stipulation shall not exceed 2-miles from centerline (267,524 acres, Map 2-58-C). These scenic corridors include: Utah Highway 128, Highway 211, Highway 279, Highway 313, the Needles Overlook Road, the Anticline Overlook Road, and the Lockhart Basin Road (including the Kane Creek Road).	Same as Alternative B, but with an exception as specified in Appendix A.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Special Designations: Wild and Scenic Rivers			
Objective Maintain and enhance the free flowing character, preserve and enhance the outstandingly remarkable values, and allow no activities within the river corridor that will alter their classification as suitable for Congressional designation in the National Wild and Scenic River (WSR) System.			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Apply an NSO stipulation to the suitable WSR segments along the Colorado and Green Rivers with the exception of Colorado River Segment 3 in Monticello (19,347 acres, Map 2-47-A/B/D).	Same as Alternative A.	Suitable WSR segments along the Colorado and Green Rivers would be closed to mineral leasing (19,347 acres, Map 2-47-C).	Same as Alternative A.
Close Monticello WSR Segment 3 along the Colorado River to mineral leasing (753 acres, Map 2-48-A/B/C/D).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Table 2–13. Special Status Species

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objective Maintain, protect, and enhance habitats of Federally listed threatened, endangered, or candidate plant or animal species to promote recovery to the point that they no longer need protection under the Endangered Species Act. Maintain, protect, and enhance habitats of BLM Sensitive plant and animal species to prevent the listing of these species under the Endangered Species Act.			
Management Actions Common To All Alternatives (see Appendix A for Mineral Lease Notices)			
Manage Special Status Species according to the entire set of decisions in the Moab and Monticello RMPs. Specific decisions regarding species found in the Moab MLP Planning Area are reiterated below.			
Raptor management would be guided by the use of Best Management Practices for Raptors and Their Associated Habitats in Utah (Utah BLM 2006, Appendix E “Best Management Practices for Raptors and Their Associated Habitats in Utah”), utilizing seasonal and spatial buffers, as recommend by the Utah Field Office of the United States Fish and Wildlife Service (USFWS) (2002), as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses. Breeding season surveys would be required.			
During nesting season for migratory birds (May 1–July 30, as recommended by the Utah Field Office of the USFWS), avoid or minimize surface-disturbing activities and vegetative-altering projects and broad-scale use of pesticides in identified occupied priority migratory bird habitat. Breeding season surveys may be required.			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Threatened and endangered species conservation measures and lease notices developed in consultation with USFWS would be used for all surface-disturbing activities to comply with the Endangered Species Act and BLM Manual 6840, Special Status Species Management. These species include: California Condor, Mexican spotted owl, Southwestern willow flycatcher, yellow-billed cuckoo, bonytail, Colorado pikeminnow, humpback chub, razorback sucker, and Jones cycladenia.			
Colorado River Endangered Fish (Endangered): No surface-disturbing activities within the 100-year floodplain of the Colorado River, Green River, and associated back waters would be allowed. Any exceptions to this requirement would require consultation with USFWS. Restrictions on surface disturbance within this critical habitat would be developed through this consultation process (19,198 acres, Map 2-49-A/B/C/D). Water depletions from any portions of the Upper Colorado River drainage basin are considered to adversely affected and adversely modify the critical habitat of the endangered fish species (bonytail, Colorado pikeminnow, humpback chub, and razorback sucker). Section 7 consultation would be completed with the USFWS prior to any such water depletions.			
Mexican Spotted Owl (Threatened): If BLM determines that a proposed action may affect Mexican spotted owl (MSO) or its habitat, consultation with USFWS would be initiated. Protect occupied and potential habitat, including designated critical habitat for the MSO (175,304 acres, Map 2-50-A/B/C/D), precluding temporary activities within designated critical habitat from March 1 through August 31. Permanent actions are prohibited year-round within 0.5-miles of a PAC.			
Southwestern Willow Flycatcher (Threatened): If BLM determines that a proposed action may affect Southwestern willow flycatcher (SWFL) or its habitat, consultation with USFWS would be initiated. Protect SWFL and their habitat by precluding surface-disturbing activities within a 100 meter buffer of suitable habitat year long. Activities within 0.25 miles of occupied breeding habitat would not occur during the breeding season, April 15 through August 15 (12,155 acres, Map 2-51-A/B/C/D.			
Yellow-billed Cuckoo (Threatened): If BLM determines that a proposed action may affect the yellow-billed cuckoo or its habitat, consultation with the USFWS would be initiated. Protect the yellow-billed cuckoo and its habitat by precluding surface-disturbing activities within 0.25-miles of occupied habitat within riparian areas from June 15 through August 31 (12,155 acres, Map 2-52-A/B/C/D).			
Jones Cycladenia (Threatened): Preclude surface-disturbing activities within 300 feet of plants and suitable habitat and preclude construction activities from May 15 through June 30 within occupied habitat.			
Bald Eagle (Sensitive): If BLM determines that a proposed action may affect the bald eagle or its habitat, consultation with the USFWS would be initiated. Protect bald eagle nest sites by precluding surface-disturbing activities within a 1.0-mile radius of nest sites from January 1 through August 31. No permanent structures would be allowed within 0.5 miles of known bald eagle nest sites year-round. Deviations may be allowed only after appropriate levels of consultation and coordination with USFWS. Protect bald eagle winter habitat by precluding surface-disturbing activities and permanent structures within a 0.5 mile radius of winter roost sites from November 1 through March 31. No permanent structures would be allowed within 0.5 miles of winter roost sites, if the structure would result in the habitat becoming unsuitable for future winter roosting by bald eagles.			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Golden Eagle (Sensitive): If BLM determines that a proposed action may affect the golden eagle or its habitat, consultation with the USFWS would be initiated. Known golden eagle nest sites would be protected according to the Bald and Golden Eagle Protection Act amended in 1978. Protect golden eagle nest sites and habitat by precluding surface-disturbing activities within 0.5 miles of documented nest sites from January 1 to August 31.			
Burrowing Owl (Sensitive and Raptor Guidelines): Protect burrowing owls by precluding surface-disturbing activities within 0.25 miles of known nests from March 1 through August 31 (see Appendix E "Best Management Practices for Raptors and their Associated Habitats in Utah").			
Ferruginous Hawk (Sensitive and Raptor Guidelines): Manage ferruginous hawk nesting and foraging habitat by precluding surface-disturbing activities within 0.5 miles of active nests from March 1 through August 1 (see Appendix E "Best Management Practices for Raptors and their Associated Habitats in Utah").			
White-tailed Prairie Dog Habitat (Sensitive): Apply a Lease Notice for mineral leasing within 660 feet of active prairie dog colonies. This stipulation would preclude surface-disturbing activities within 660 feet of these colonies. No permanent above-ground facilities would be allowed within 660 feet of prairie dog colonies. Power lines would be avoided within prairie dog colonies; however, in the event that power lines are required within colonies, raptor anti-perch devices would be required.			
Gunnison Prairie Dog Habitat (Sensitive): Manage 6,825 acres of habitat designated by UDWR for Gunnison prairie dogs. Apply a Lease Notice for mineral leasing within 660 feet of active prairie dog colonies. This stipulation would preclude surface-disturbing activities within 660 feet of these colonies. No permanent above-ground facilities would be allowed within 660 feet of prairie dog colonies. Power lines would be avoided within prairie dog colonies; however, in the event that power lines are required within colonies, raptor anti-perch devices would be required.			
Kit Fox (Sensitive): Apply a Lease Notice to protect the kit fox by precluding surface-disturbing activities within 660 feet (200 meters) of an occupied kit fox den.			
California Condor (Endangered, Experimental): Within potential habitat for the California Condor, surveys would be required prior to operations unless species occupancy and distribution information is complete and available. Surface-disturbing activities would not occur within 1.0 miles of nest sites during the breeding season of August 1 to November 30 or within 0.5 miles of established roosting sites (see Standard Terms and Conditions [Lease Notices] which are Required to Protect Special Status Species and to Comply with the Endangered Species Act). No permanent infrastructure would be placed within 1.0 mile of nest sites and within 0.5 miles of established roosting sites.			
Management Actions by Alternative (see Appendix A for Mineral Leasing Stipulations)			
Special status plant species were not addressed. This means that a lease stipulation requiring sensitive plant surveys would not be applied.	Apply a CSU stipulation in habitat for BLM sensitive plants (61,591 acres, Map 2-53-B/C/D) requiring operators to conduct a survey and avoid these plants. The plant habitats requiring surveys are: Alcove rock daisy,	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Canyonlands lomatium, Cisco milkvetch, Entrada rushpink, Jane's globemallow, Paradox breadroot, Stage Station milkvetch, and Trotter's oreoxsis.		

Table 2–14. Vegetation

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Objectives Develop management prescriptions for all surface-disturbing activities during times of drought. Minimize impacts to vegetative communities. Control invasive and non-native weed species and prevent the introduction of new invasive species.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Adaptive Drought Management: Establish criteria for restricting activities during drought based on the following measures/parameters: Severe (D2): • No restrictions. Extreme (D3): • No new surface-disturbing activities in areas with sensitive soil • Require additional erosion-control techniques/BMPs for surface-disturbing activities (e.g., hydromulching). Exceptional (D4): • No new surface-disturbing activities (subject to valid existing rights or actions	For extreme (D3) and exceptional (D4) drought, apply BMPs to reduce dust production (Appendix B).	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
associated with other valid permitted activities). The restrictions above were not applied as mineral leasing stipulations.			
Avoid or minimize to the extent possible the loss of sagebrush/steppe habitat from BLM-initiated or authorized actions. BLM recommends that loss of sagebrush/steppe habitat essential to wildlife (e.g., sage-grouse, mule deer, and sagebrush obligate species) be reclaimed or mitigated offsite.	Apply the Baseline CSU stipulation (see Minerals section Alternative B) to minimize impacts in sagebrush/steppe habitat in areas with moderately high to very high ecological intactness (11,269 acres, Map 2-54-B/D). Apply BMPs to further minimize impacts to sagebrush/steppe habitat including compensatory mitigation measures outside the area of impact (Appendix B). **Alternative B1:** Apply a CSU stipulation within PPFAs requiring compensatory mitigation outside the area of impact for any surface disturbance within sagebrush steppe habitat in areas with low to moderately low ecological intactness (8,781 acres, Map 2-55-B1/D). One acre of rehabilitation, or an amount to be determined of an equal value to the impacted resource, would be required for each acre of disturbance.	Apply the Baseline CSU stipulation (see Minerals section Alternative C) to minimize impacts in sagebrush/steppe habitat (68,272 acres, Map 2-54-C). Apply BMPs to further minimize impacts to sagebrush/steppe habitat including compensatory mitigation measures outside the area of impact (Appendix B).	Apply the Baseline CSU stipulation (see Minerals section Alternative B) to minimize impacts in sagebrush/steppe habitat in areas with moderately high to very high ecological intactness (11,269 acres, Map 2-54-B/D). Apply a CSU stipulation within PPFAs requiring compensatory mitigation outside the area of impact for any surface disturbance within sagebrush steppe habitat in areas with low to moderately low ecological intactness (8,781 acres, Map 2-55-B1/D). One acre of rehabilitation, or an amount to be determined of an equal value to the impacted resource, would be required for each acre of disturbance. Apply BMPs to further minimize impacts to sagebrush/steppe habitat including compensatory mitigation measures outside the area of impact (Appendix B).
Restoration and rehabilitation would use native seed-mixes wherever possible. Non-native species may be used as necessary for stabilization or to prevent invasion of noxious or invasive weed species.	Apply BMPs from Appendix B for reclamation, soils and noxious weeds. These BMPs include requirements for seeding to improve soil stabilization or to prevent noxious or invasive weed species.	Same as Alternative B.	Same as Alternative B.
Control noxious weed species and prevent the infestation and spread of invasive species. Develop cooperating agreements with other	Apply BMPs from Appendix B to control noxious weeds and invasive species.	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Federal, State, local and private organizations to control invasive and noxious weed species.			

Table 2–15. Visual Resources Management/Auditory Management (Soundscapes)

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objectives Manage public lands in a manner that protects the quality of scenic values. Recognize and manage visual resources for overall multiple use, filming, and recreational opportunities for visitors to public lands. Manage BLM actions to preserve those scenic vistas that are most important. Manage sensitive public lands to preserve soundscapes that enhance recreational experiences.			
Management Actions By Alternative (see Appendix A for Mineral Leasing Stipulations)			
Areas with high potential for development of oil and gas (Big Flat/Hatch Point) will be designated as VRM Class III with the exception of those portions of SRMAs and ACECs that have more stringent VRM classifications.	Apply the Baseline CSU stipulation (see Minerals section Alternative B) to all VRI Class II areas within the Moab Field Office that are managed as VRM Class III (146,960 acres, Map 2-56-B/C/D).	Apply the Baseline CSU stipulation (see Minerals section Alternative C) to VRI Class II areas within the Moab Field Office that are managed as VRM Class III (146,960 acres, Map 2-56-B/C/D).	Same as Alternative B, but with exceptions as specified in Appendix A.
Apply an NSO stipulation for mineral leasing in all areas designated as VRM Class I (13,417 acres, Map 2-57-A/B).	Same as Alternative A.	Close all VRM Class I areas to mineral leasing (13,417 acres, Map 2-57-C/D).	Same as Alternative C.
Apply a CSU stipulation for mineral leasing to all areas designated as VRM Class II. This requires surface-disturbing activities to meet the objectives of VRM Class II (324,721 acres, Map 2-59-A)	Apply an NSO stipulation to all VRM Class II areas (324,721 acres, Map 2-59-B/C/D).	Same as Alternative B.	Same as Alternative B, but with exceptions as specified in Appendix A.
Public lands within the viewshed of Arches National Park are designated as VRM Class II (47,167 acres, Map 2-60-A).	Apply an NSO stipulation to the immediate viewshed from Arches National Park to mineral leasing. The viewshed is defined as the BLM acreage surrounding Arches National	Close the immediate viewshed from Arches National Park to mineral leasing. The viewshed is defined as the BLM acreage surrounding Arches National Park that is managed as	Close the immediate viewshed from Arches National Park to mineral leasing. The viewshed is defined as the BLM acreage surrounding Arches National Park that is managed as

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Apply a CSU stipulation for mineral leasing to all areas designated as VRM Class II. This requires surface-disturbing activities to meet the objectives of VRM Class II.	Park that is managed as VRM Class II (47,167 acres, Map 2-60-B) and/or inventoried as VRI Class II (65,349 acres, Map 2-60-B). These stipulations would provide a visual buffer for the Parks. Also, apply BMPs in Appendix B for visual resources.	VRM Class II (47,167 acres, Map 2-60-C) and/or inventoried as VRI Class II (65,349 acres, Map 2-60-C). Apply an NSO stipulation to the viewshed on the northern side of Arches National Park that is outside the VRI Class II areas (34,243 acres, Map 2-60-C). These stipulations would provide a visual buffer for the National Parks. Also, apply BMPs in Appendix B for visual resources.	VRM Class II (47,167 acres, Map 2-60-D) and/or inventoried as VRI Class II (65,349 acres, Map 2-60-D). These stipulations would provide a visual buffer for the National Parks. Also, apply BMPs in Appendix B for visual resources.
The viewshed of Canyonlands is not addressed. This means that a lease stipulation to provide a visual buffer for Canyonlands National Park would not be applied.	Apply an NSO stipulation to the VRM Class II area along the northern boundary of Canyonlands National Park (8,358 acres, Map 2-61-B). Apply an NSO stipulation to the VRM Class II area along the eastern boundary of Canyonlands National Park (45,506 acres, Map 2-61-B). These stipulations would provide a visual buffer for the Parks. Also, apply BMPs in Appendix B for visual resources.	Close the VRM Class II areas on the northern boundary of Canyonlands National Park to mineral leasing (8,358 acres, Map 2-61-C/D) Apply an NSO stipulation to the viewshed from the northern boundary of Canyonlands National Park that is outside the VRM Class II area (3,800 acres, Map 2-61-C/D). Close BLM lands to mineral leasing along the entire eastern boundary of Canyonlands National Park for a distance of 3-miles to protect the foreground viewshed from the Park boundary (67,280 acres, Map 2-61-C/D). These stipulations would provide a visual buffer for the National Parks. Also, apply BMPs in Appendix B for visual resources.	Same as Alternative C.
The viewsheds along the rims of the Colorado and Green Rivers were not addressed. This means that a lease stipulation to protect visual resources along the rims of the Colorado and Green Rivers would not be applied.	Apply an NSO stipulation to protect the visual resources along the rims of the Colorado and Green Rivers. This stipulation would apply to a 1-mile setback from these rims (54,270 acres, Map 2-62 B/D).	Apply an NSO stipulation to protect the visual resources along the rims of the Colorado and Green Rivers. This stipulation would apply to a 2-mile setback from these rims (99,168 acres, Map 2-62-C).	Same as Alternative B, but with an exception as specified in Appendix A.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
BMPs for visual resources, including night skies, were not addressed. This means that BMPs or lease stipulations would not be applied to protect night skies.	Throughout the Planning Area, apply BMPs from Appendix B for reducing potential impacts to visual resources, including night skies.	Apply a CSU stipulation to the entire Planning Area that requires the following: • Minimize flaring of gas. • Limit the use of artificial lighting during nighttime operations to only those that are determined necessary for safety. • Utilize shielding and aiming techniques as well as limiting the height of light poles to reduce glare and avoid light shining above horizons. • Direct lights downward onto the task area. The bottom surface of the light fixture should be level, or if unable to be fully level, point it as close to straight down as possible or shield it to avoid light being projected horizontally. • Use motion sensors, timers, or manual switching for areas that require illumination but are seldom occupied. • Reduce lamp brightness and select lights that are not broad spectrum or bluish in color.	Same as Alternative B.
Auditory Management (Soundscapes)			
Auditory Management was not specifically addressed. This means that BMPs or lease stipulations would not be applied to protect natural soundscapes.	Apply BMPs to mitigate noise associated with mineral operations.	Apply BMPs to mitigate noise associated with mineral operations. Based on noise modelling, apply a CSU stipulation within 6.1 miles (9,800 meters) of National Parks that requires the following measures (369,519 acres, Map 2-63-C/D). Noise mitigation efforts would be implemented with a maximum decibel level of 51 decibels for production	Same as Alternative C.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
		(measured at 350 feet from the source). This sound level could be achieved by replacement diesel engine exhaust silencers (mufflers), noise barriers, and other noise control measures. See *Aesthetic and Noise Control Regulations Colorado Oil and Gas Conservation Commission.*	
Auditory management was not specifically addressed. This means that stipulations would not be applied to protect soundscapes.	Apply an NSO stipulation to areas located within 2.5 miles (based on noise modelling) of National Park boundaries in order to reduce auditory impacts from mineral operations to backcountry portions of Arches and Canyonlands National Parks (148,432 acres, Map 2-64-B/D).	Apply an NSO stipulation to areas located within 2.8 miles (based on noise modeling) of National Park boundaries in order to further reduce auditory impacts from mineral operations to backcountry portions of Arches and Canyonlands National Parks (166,099 acres, Map 2-64-C).	Same as Alternative B, but with no exceptions.

Table 2–16. Wildlife and Fisheries

Alternative A (No Action)	Alternative B	Alternative C	Alternative D
Objectives Maintain, protect, and enhance habitats to support natural wildlife diversity, reproductive capability, and a healthy, self-sustaining population of wildlife and fish species. Manage crucial, high-value, and unfragmented habitats as management priorities.			
Management Actions Common To All Alternatives (see Appendix A for Mineral Leasing Stipulations)			
Raptor management would be guided by the use of Best Management Practices for Raptors and Their Associated Habitats in Utah (Utah BLM 2006, Appendix E "Best Management Practices for Raptors and Their Associated Habitats in Utah"), utilizing seasonal and spatial buffers, as recommend by the Utah Field Office of the USFWS (2002), as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.			
Lockhart Basin desert bighorn sheep herd: Within desert bighorn sheep lambing and rutting areas for the Lockhart desert bighorn sheep herd (55,561 acres), apply a TL stipulation where no surface-disturbing activities or occupancy are allowed from April 1 through June 15 for lambing and from October 15 through December 15 for rutting. This includes the 9,237 acres of habitat along the rim of Hatch Point (64,798 acres, Map 2-65-A/B/C/D).			

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
Management Actions by Alternative			
Pronghorn Habitat			
Protect pronghorn fawning habitat by applying a TL stipulation that would preclude surface-disturbing activities from May 1 to June 15 (99,744 acres, Map 2-66-A/B2).	**Alternative B1:** Same as Alternative A, except this stipulation would not apply to PPFAs. See Map 2-66-B1/D, 85,639 acres. Within PPFAs, apply a CSU stipulation for compensatory mitigation outside the area of impact within pronghorn habitat. Water development, habitat improvements, and other applicable measures adequate to compensate for the loss of pronghorn habitat would be required when production facilities are constructed (14,105 acres). Apply BMPs for the protection of pronghorn during mineral activities (Appendix B). **Alternative B2:** Same as Alternative A except apply BMPs for the protection of pronghorn during mineral activities (Appendix B). See Map 20-66-A/B2, 99,744 acres.	Protect pronghorn habitat by applying a TL stipulation that would preclude surface-disturbing activities from May 1 to June 15 (253,292 acres, Map 2-66-C). Apply BMPs for the protection of pronghorn during mineral activities.	Same as Alternative A except this stipulation would not apply to PPFAs. See Map 2-66-B1/D, 85,639 acres. Within PPFAs, apply a CSU stipulation for compensatory mitigation outside the area of impact within pronghorn habitat. Water development, habitat improvements, and other applicable measures adequate to compensate for the loss of pronghorn habitat would be required when production facilities are constructed (14,105 acres). Apply BMPs for the protection of pronghorn during mineral activities (Appendix B).
Desert Bighorn Sheep Habitat (Potash-Confluence Herd)			
To protect lambing, rutting, and migration habitat, apply a no surface occupancy stipulation for mineral leasing (101,461 acres, Map 2-67-A). Within migration corridors pipeline construction and geophysical exploration for oil and gas development would be allowed outside lambing and rutting periods from June 16 through October 14 and from December 15 through March 31, respectively.	To protect lambing and rutting habitat), apply a CSU stipulation for mineral leasing (107,220 acres, Map 2-67-B/D). This CSU stipulation would preclude drilling operations and permanent facilities but would allow for road and pipeline construction, and geophysical exploration outside of lambing and rutting periods. **Alternative B1:** Within PPFAs, apply a CSU stipulation for compensatory mitigation outside the area of impact within desert bighorn sheep habitat.	To protect lambing and rutting habitat, apply an NSO stipulation for mineral leasing (107,220 acres, Map 2-67-C. Apply the Baseline CSU stipulation (see Minerals section Alternative C) throughout the desert bighorn sheep habitat outside of the area where an NSO stipulation is applied to lambing and rutting habitat (149,782 acres).	To protect lambing and rutting habitat), apply a CSU stipulation for mineral leasing (107,220 acres, Map 2-67-B/D). This CSU stipulation would preclude drilling operations and permanent facilities but would allow for road and pipeline construction, and geophysical exploration outside of lambing and rutting periods. Within PPFAs, apply a CSU stipulation for compensatory mitigation outside the area of impact within desert bighorn sheep habitat.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
	Water development, habitat improvements, and other applicable measures adequate to compensate for the loss of bighorn sheep habitat would be required when production facilities are constructed (9,875 acres, Map 2-67-B1/D). Apply the Baseline CSU stipulation (see Minerals section Alternative B) to desert bighorn sheep habitat, except for a small portion located within the PPFAs (247,127 acres). **Alternative B2:** Apply the Baseline CSU stipulation (see Minerals section Alternative B) to desert bighorn sheep habitat (257,002 acres).		Water development, habitat improvements, and other applicable measures adequate to compensate for the loss of bighorn sheep habitat would be required when production facilities are constructed (9,875 acres, Map 2-67-B1/D). Apply the Baseline CSU stipulation (see Minerals section Alternative B) to desert bighorn sheep habitat, except for a small portion located within the PPFAs (247,127 acres).
Deer and Elk Habitat			
Moab: Protect deer and/or elk crucial winter habitat (16,804 acres) by applying a TL stipulation for mineral leasing. *Monticello*: Within deer winter range (64,042 acres), apply a TL where no surface-disturbing activities may occur from November 15 to April 15. Within elk winter range (1,701 acres), apply a TL where no surface-disturbing activities may occur from November 15 to April 15. Within deer fawning and elk calving grounds apply a TL where no surface-disturbing activities may occur from May 15 through June 30 (8,354 acres). See Map 2-68-A (90,901 acres).	Based on new data from UDWR, protect deer and elk crucial winter habitat by applying a TL stipulation where no surface-disturbing activities may occur from November 15 through April 15 (125,995 acres, Map 2-68-B/D). Within deer fawning and elk calving grounds apply a TL where no surface-disturbing activities may occur from May 15 through June 30 (8,354 acres, Map 2-68-B/D). Apply the Baseline CSU stipulation (see Minerals section Alternative B) throughout deer and elk crucial winter habitat.	Based on new data from UDWR, protect deer and elk crucial and substantial winter habitat by applying a TL stipulation where no surface-disturbing activities may occur from November 15 through April 15 (134,625 acres, Map 2-68-C). Within deer fawning and elk calving grounds apply a TL where no surface-disturbing activities may occur from May 15 through June 30 (8,354 acres, Map 2-68-C). Apply the Baseline CSU stipulation (see Minerals section Alternative C) throughout deer and elk crucial and substantial winter habitat.	Same as Alternative B.
Big Game Animal Habitat			
The potential for a decrease in wildlife habitat function was not	Apply BMPs including those utilizing compensatory mitigation outside the	Same as Alternative B.	Same as Alternative B.

Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred)
specifically addressed. This means that BMPs may not be applied to minimize impacts to wildlife.	area of impact (Appendix B) to minimize impacts to wildlife, as well as the potential for a decrease in wildlife habitat function.		

Table 2–17. Projected Oil and Gas Development and Surface Disturbance on BLM Lands (over next 15 years)

Action	Alternative A	Alternative B1	Alternative B2	Alternative C	Alternative D
Well pads	58 well pads	38 well pads	47 well pads	9 well pads	42 well pads
Gross surface disturbance	476 acres	312 acres	385 acres	74 acres	344 acres
Net surface disturbance after reclamation	343 acres	225 acres	277 acres	53 acres	248 acres
Geophysical operations	499 acres	333 acres	410 acres	78 acres	366 acres

Table 2–18. Oil and Gas Leasing Summary

Stipulation	Alternative A (acres)	Alternative B1 (acres)	Alternative B2 (acres)	Alternative C (acres)	Alternative D (acres)
Open with Standard Terms and Conditions	210,884	0	0	0	0
CSU/TL	440,356	228,926	285,806	54,799	230,765
Baseline CSU*	0	154,496	222,289	25,932	159,032
NSO	133,574	452,269	499,008	550,599	305,899
Area within PLAs	0	103,619	0	0	103,619
Closed	753	753	753	180,169	145,284
Area Open for New Oil and Gas Leasing	**784,814**	**681,195**	**784,814**	**605,398**	**536,664**

* Baseline CSU is not additive to the total Planning Area because it overlaps the standard CSU/TL.

Table 2–19. Projected Potash Development and Surface Disturbance on BLM Lands (over next 15 years)

Action	Alternative A	Alternative B1	Alternative B2	Alternative C	Alternative D
Solar Evaporation Processing					
Potash annual production	400,000 tons per year	300,000 tons per year	0 tons per year	0 tons per year	300,000 tons per year
Solar evaporation pond disturbance	2,400 acres	1,800 acres	0 acres	0 acres	1,800 acres
Processing plant disturbance	1,316 acres	987 acres	0 acres	0 acres	987 acres
Production well pads	18 well pads	12 well pads	0 well pads	0 well pads	12 well pads
Production well pad disturbance	108 acres	72 acres	0 acres	0 acres	72 acres
Crystallization Processing					
Potash annual production	2,000,000 tons per year	1,000,000 tons per year	0 tons per year	0 tons per year	1,020,000 tons per year
Processing plant disturbance	500 acres	250 acres	0 acres	0 acres	250 acres
Production well pads	86 well pads	42 well pads	0 well pads	0 well pads	45 well pads
Production well pad disturbance	516 acres	252 acres	0 acres	0 acres	270 acres
Surface Disturbance for Non-production Wells (exploration, water, disposal, monitoring)					
Exploration and miscellaneous wells	133 wells	72 wells	0 wells	0 wells	72 wells
Exploration and miscellaneous well disturbance	599 acres	323 acres	0 acres	0 acres	323 acres
Net surface disturbance after reclamation	309 acres	167 acres	0 acres	0 acres	167 acres

Table 2–20. Potash Leasing Summary

Stipulation	Alternative A	Alternative B1	Alternative B2	Alternative C	Alternative D
Open with Standard Terms and Conditions	210,884	0	0	0	0
CSU/TL	440,356	57,620	0	0	57,308
Baseline CSU*	0	53,689	0	0	54,186
NSO	133,574	45,999	0	0	46,311
Open Subject to Phased Leasing and Appropriate Stipulations	0	681,195	0	0	536,664
Closed	753	753	785,567	785,567	145,284
Area Open for Initial Potash Leasing	**784,814**	**103,619**	**0**	**0**	**103,619**

* Baseline CSU stipulation is not additive to the total Planning Area because it overlaps the standard CSU/TL. The Baseline CSU stipulation is explained in detail in the Minerals section.

2.5 COMPARATIVE SUMMARY OF IMPACTS

Table 2–21 briefly summarizes the impacts of the actions proposed under each alternative, organized by resource or resource management program. A detailed discussion of the environmental consequences of the actions proposed under each alternative is presented in Chapter 4.

Table 2–21. Comparative Summary of Impacts

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
Air Quality			
Impacts to air quality would occur from mineral leasing activities that cause emissions of criteria air pollutants plus hazardous air pollutants (HAP) and greenhouse gases (GHG), along with fugitive dust emissions from surface disturbances associated with mineral leasing, including operations and construction of related facilities. Under Alternative A, 210,884 acres would be open to oil, gas, and potash leasing, subject only to standard terms and conditions. Air resources in these areas would be the most vulnerable to impacts from leasing operations. BMPs that address blowing dust and surface disturbance during drought conditions would reduce impacts to air quality. Management under Alternative A could result in the greatest impacts to air quality from mineral development.	Impacts to air quality would be similar to those described under Alternative A; however, Alternative B would protect air resources to a greater degree than Alternative A. Management to reduce impacts to air quality include the application of additional stipulations for mineral leasing, including the Baseline CSU, and new BMPs which could reduce or minimize new emission sources. Applying NSO stipulations for mineral leasing would provide further localized and/or regional protections to air quality by preventing the surface-disturbing activities associated with mineral leasing. Applying BMPs to address fugitive dust and to minimize emissions would protect air quality similar to Alternative A, except the BMPs would be applied to a greater area. **B1**: Under Alternative B1, oil and gas leasing would not overlap areas of potash leasing (103,619 acres), thereby limiting the amount of surface disturbance from leasing activities. Compared to Alternative A, there would be greater acreage subject to NSO stipulations (452,269 acres) which would provide greater protections to air quality in the Planning Area. There would be no areas open to oil and gas and potash leasing with only standard terms and conditions in Alternative B1 (210,884 acres open under Alternative A), reducing the development of oil and gas and potash leases, and further reducing sources of emissions and particulate matter. **B2**: No potash leasing would occur in the Planning Area (785,567 acres) under Alternative B2, further	Impacts to air quality would be similar to those described under Alternative A, however; Alternative C would provide the greatest support of air quality due to the largest areas closed to mineral development (180,169 acres), largest areas with NSO stipulations (550,599 acres), and closing the Planning Area to potash leasing. Alternative C applies the Baseline CSU, BMPs, and lease stipulations, similar to Alternative B, which would further support the reduction of emissions and particulate matter from oil and gas development. There would be no areas open to oil and gas leasing with only standard terms and conditions (210,884 acres open under Alternative A) reducing the development of oil and gas leases and further reducing sources of emissions and particulate matter.	Impacts to air quality would be similar to those described under Alternative A; however, Alternative D would support air resources to a greater degree than Alternative A. Alternative D would have more lands closed to oil and gas development, compared to Alternatives A and B1 (145,284 acres); however, Alternative D would allow exceptions to lease stipulations, which could result in increased impacts to air resources compared to Alternative B1. Alternative D applies the Baseline CSU, BMPs, and lease stipulations. There would be no areas open to oil and gas leasing with only standard terms and conditions, similar to Alternative B1, which would further support the reduction of emissions and particulate matter from oil and gas development.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
	reducing sources of emissions and particulate matter. Under Alternative B2, there would be greater acreage subject to NSO stipulations (499,008 acres), which would provide greater protections to air quality in the Planning Area compared to Alternative A. There would be no areas open to oil and gas leasing with only standard terms and conditions in Alternative B2 (210,884 acres open under Alternative A), reducing the development of oil and gas leases, and further reducing sources of emissions and particulate matter.		
Cultural Resources			
Under Alternative A, impacts to cultural resources from surface-disturbing activities would occur from oil, gas, and potash leasing and development activities. About 651,270 acres (83 percent of the Planning Area) are open to leasing and development under standard terms and conditions or CSU and TL stipulations. Because development may occur in these areas, impacts would be greatest within 83 percent of the Planning Area. The remaining 17 percent of the Planning Area is subject to an NSO stipulation (133,574 acres) and closed to mineral leasing (753 acres). Cultural resources would incur very few impacts from oil, gas or potash leasing and development within these areas.	Impacts to cultural resources from surface disturbance would be similar to those described under Alternative A; however, Alternative B has additional protections to cultural resources from lease stipulations, the Baseline CSU stipulation, Lease Notices, and BMPs which would reduce impacts to cultural resources compared to Alternative A. Applying an NSO stipulation up to a 0.5-mile buffer around 13 specific cultural sites or cultural concentration areas within 22,328 acres would provide greater protection to cultural resources compared to Alternative A. **B1:** About 228,926 acres (29% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because oil and gas development may occur in these areas, impacts would be greatest within 29 percent of the Planning Area. The remaining 58 percent of the Planning Area is subject to a NSO stipulation (452,269 acres) and closed to oil and gas leasing (753 acres), protecting cultural resources from oil and gas development within these areas. About 103,619 acres would be open to potash leasing and development within the PLAs, reducing the density of disturbance within these areas. Alternative B1 would reduce the availability of lands	Impacts to cultural resources from surface disturbance would be similar to those described in Alternatives A and B; however, Alternative C provides the greatest protections to cultural resources from lease stipulations, the Baseline CSU stipulation, Lease Notices and BMPs. Applying an NSO stipulation up to a 1.0-mile buffer around 13 specific cultural sites or cultural concentration areas within 45,289 acres would provide the greatest protection to cultural resources compared to Alternatives A and B. About 54,799 acres (7% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because development may occur in these areas, impacts would be greatest within 7 percent of the Planning Area. The remaining 93 percent of the Planning Area is subject to an NSO stipulation	Impacts to cultural resources from surface disturbance would be similar to those described in Alternative A; however, Alternative D has additional protections to cultural resources from lease stipulations, the Baseline CSU stipulation, Lease Notices and BMPs, the same as described under Alternative B. About 230,765 acres (29% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because oil and gas development may occur in these areas, impacts would be greatest within 29 percent of the Planning Area. The remaining 57 percent of the Planning Area is subject to an NSO stipulation (305,899 acres) and closed to oil and gas leasing (145,284 acres). About 103,619 acres would be initially open to potash leasing and development within the

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
	for potash leasing compared to Alternative A, thereby reducing impacts to cultural resources. **B2:** About 285,806 acres (36% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because development may occur in these areas, impacts would be greatest within 36 percent of the Planning Area. The remaining 64 percent of the Planning Area is subject to a NSO stipulation (499,008 acres) and closed to mineral leasing (753 acres) protecting cultural resources from mineral development within these areas. Closing the Planning Area to potash leasing would prevent damage to cultural resources and eliminate the availability of lands for potash leasing, reducing impacts to cultural resources in these areas to a greater degree compared to Alternatives A and B1.	(550,599 acres) and closed to mineral leasing (180,169 acres), protecting the largest area of cultural resources from mineral development within these areas. Impacts to closing the Planning Area to potash leasing would be the same as described under Alternative B2.	PLAs, reducing the density of disturbance within these areas, the same as described under Alternative B1.
Lands and Realty			
Impacts on lands and realty management from Alternative A would be minimal due to the limited number of realty actions affected. An NSO stipulation for the existing Three Rivers mineral withdrawal (23,441 acres) would continue to protect the river corridor. Applying an NSO stipulation along the U.S. Highway 191 utility corridor would ensure that conflicts in development would not occur within the corridor.	Impacts on lands and realty management would be similar to those identified under Alternative A, although additional management would provide greater support to the lands and realty program. Precluding heavy trucks on the Needles and Anticline Scenic Byways would protect the integrity of the road and preserve the scenic driving experience. However, an exception could be granted which could impact the scenic driving experience. A 1.0-mile CSU stipulation within high use filming areas (177,594 acres) would allow access and undisturbed scenic quality within these areas, protecting these areas to a greater degree compared to Alternative A.	Impacts to lands and realty management would be fewer than Alternatives A and B due to more protective management and fewer resource conflicts. Under Alternative C, there would be greater protection to the Three Rivers mineral withdrawal area due to closing the area to mineral leasing. Precluding heavy trucks on the Needles and Anticline Scenic Byways would protect the integrity of the road and preserve the scenic driving experience. A 1.0-mile NSO stipulation would be applied to high use filming areas rather than a CSU in Alternative B, which could protect scenic resources	Impacts on lands and realty management would be the same as Alternative B, providing greater mitigation for the lands and realty program compared to Alternative A, but less than that provided in Alternative C.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
		compared to both Alternatives A and B.	
Lands with Wilderness Characteristics			
The construction and operation of oil, gas, and potash wells would create ground disturbance and structures that would degrade the naturalness of lands with wilderness characteristics. The noise of construction and operation of producing wells would degrade opportunities for solitude and primitive recreation. Within the 192,220 acres of lands with wilderness characteristics, 32,293 acres are managed as open with standard terms and conditions (open) and 118,270 acres are managed with CSU or TL stipulations (minor constraints). These areas could also lose the minimum size criteria (of 5,000 acres) required to be considered as containing wilderness characteristics.	Applying the Baseline CSU and BMPs could reduce impacts from oil, gas, and potash development by reducing noise and traffic, controlling well spacing, and requiring screening to reduce the visibility of development. Alternative B would provide greater protections to lands with wilderness characteristics compared to Alternative A. **B1:** Within the 192,220 acres of lands with wilderness characteristics, 16,437 would be open to oil and gas leasing subject to CSU and TL stipulations (minor constraints). About 83 percent of the lands with wilderness characteristics in Alternative B1 are subject to NSO stipulations (158,979 acres) and closed to oil and gas leasing (753 acres). Major constraints would protect lands with wilderness characteristics by precluding mineral development. Limiting potash development to PLAs would limit impacts to 5,898 acres where leasing with CSU stipulations overlap lands with wilderness characteristics. **B2:** The entire Planning Area would be closed to potash leasing, but open to oil and gas leasing, which would reduce impacts to lands with wilderness characteristics compared to Alternatives A and B1. About 88 percent of the lands with wilderness characteristics in Alternative B2 are subject to NSO stipulations (168,997 acres) and closed to oil and gas leasing (753 acres), protecting the values within lands with wilderness characteristics.	Applying the Baseline CSU and BMPs would reduce impacts to lands with wilderness characteristics to a similar degree as Alternative B, and more than Alternative A. About 98 percent of the lands with wilderness characteristics in Alternative C are subject to NSO stipulations (115,592 acres) and closed to oil and gas leasing (101,397 acres), providing the greatest protection to lands with wilderness characteristics. Impacts to lands with wilderness characteristics from closing the Planning Area to potash leasing would be the same as Alternative B2.	Applying the Baseline CSU and BMPs would reduce impacts to lands with wilderness characteristics to a similar degree as Alternative B, more than Alternative A, and less than Alternative C. Exceptions to lease stipulations under Alternative D could allow more impacts to lands with wilderness characteristics than would occur in Alternative B. About 83 percent of the lands with wilderness characteristics in Alternative D are subject to NSO stipulations (77,838 acres) and closed to oil and gas leasing (81,516 acres). These major constraints would protect lands with wilderness characteristics by precluding mineral development.
Livestock Grazing			
Impacts to livestock grazing would result from activities where vegetation and forage resources are damaged or removed by large	**B1:** Impacts to livestock grazing would be similar to those described under Alternative A, except Alternative B1 would allow potash processing facilities only within PPFAs.	Impacts to livestock grazing would not occur because the construction of potash processing facilities would be	Impacts to livestock grazing would be the same as those described under Alternative B1.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
scale construction of permanent potash processing facilities. Alternative A could result in the greatest losses of AUMs among all of the Alternatives. Under Alternative A, potash processing facilities could be built within lands available for leasing of oil, gas, and potash within the same area, subject only to standard lease terms and conditions (210,884 acres) as well as lands subject to CSU and TL stipulations (443,056 acres) These areas would be the most vulnerable to damage or loss of forage resources for livestock from leasing activities and infrastructure construction. Up to 198 AUMs could be removed from the construction of solar evaporation potash processing facilities; construction of a crystallization potash processing facility could remove up to 26 AUMs.	Potash leasing (103,619 acres) could occur, but not within the same areas as oil and gas leasing, limiting the amount of surface disturbance and infrastructure within the leasing areas. Up to 59 AUMs could be lost during the course of development of potash processing facilities. **B2:** Impacts to livestock grazing would not occur because the construction of potash processing facilities would be precluded and no AUMs would be removed.	precluded and no Animal Unit Months (AUM) would be removed.	
Minerals			
Oil and Gas			
Applying lease stipulations with minor (TL and CSU) or major (NSO) constraints could result in additional costs, delays, or complexity of operations. Under Alternative A, the projection for oil and gas development would be 58 well pads and 232 wells over the next 15 years. This would result in 476 acres of surface disturbance.	Impacts to oil and gas development would be similar to those described under Alternative A; however, under Alternative B, additional lease stipulations, the Baseline CSU stipulation, BMPs, and Lease Notices would result in fewer wells projected for development compared to Alternative A. There are no lands open to oil and gas development subject to standard terms and conditions, impacting the ability and flexibility to develop leases to a greater degree compared to Alternative A. **B1:** Under Alternative B1, the projection for oil and gas development would be 38 well pads and 152	Impacts to oil and gas development would be similar to those described under Alternative A; however, under Alternative C, additional lease stipulations, the Baseline CSU stipulation, BMPs, and Lease Notices would result in the fewest number of wells projected for development. Impacts from no lands being open to oil and gas	Impacts to oil and gas development would be similar to those described under Alternative A. Under Alternative D, additional lease stipulations, the Baseline CSU stipulation, BMPs, and Lease Notices would result in fewer wells projected for development compared to Alternatives A and B2, but more wells than Alternatives B1 and C. Impacts

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
Alternative A would allow the most flexibility for oil and gas development with 210,884 acres open subject to standard terms and conditions. About 440,356 acres would be managed with CSU and TL stipulations, which could require additional cost or delays in development; however, development could still occur on those lands. Applying 133,574 acres of NSO stipulation would increase the cost and complexity of mineral operations, requiring the use of methods such as horizontal drilling to access oil and gas resources. Closing 753 acres to mineral leasing would eliminate opportunities to develop oil and gas resources in those areas. Potash leasing could compete for the same land resources as oil and gas. Applying BMPs could delay oil and gas development or affect the location and timing of development.	wells over the next 15 years. This would result in 312 acres of surface disturbance. Identified PLAs would reduce lands initially open for oil and gas leasing and development on 103,619 acres. Under Alternative B1, 228,926 acres would be managed as CSU/TL (208,185 acres of those would be subject to the Baseline CSU), 452,269 acres would be managed as NSO and the same number of acres as Alternative A would be closed to oil and gas development (753 acres). **B2:** The projection for oil and gas development would be 47 well pads and 188 wells over the next 15 years. This would result in 385 acres of surface disturbance. The entire Planning Area would be closed to potash leasing and development, allowing more land open for oil and gas development compared to Alternative B1. Under Alternative B2, 285,806 acres would be managed as CSU/TL (222,289 acres of those would be subject to the Baseline CSU), 499,008 acres would be managed as NSO and the same number of acres as Alternative A would be closed to oil and gas development (753 acres).	development subject to standard terms and conditions are the same as Alternative B. Under Alternative C, the projection for oil and gas development would be 9 well pads and 36 wells over the next 15 years. This would result in 74 acres of surface disturbance. Alternative C would have the greatest impacts to oil and gas development among all of the alternatives due to the largest acres of lands managed as NSO (550,599 acres) and closed to oil and gas development (180,169 acres). In addition, the smallest number of acres would be managed with CSU stipulations (54,799 acres) and only 25,492 acres managed with the Baseline CSU, further reducing the availability and flexibility of development within the Planning area compared to Alternatives A, B, and D.	from no lands being open to oil and gas development subject to standard terms and conditions are the same as Alternative B. Under Alternative B1, projection for oil and gas development would be 42 well pads and 168 wells over the next 15 years. This would result in 344 acres of surface disturbance. Identified PLAs would reduce lands initially open for oil and gas development on 103,619 acres. Approximately 260,765 acres would be managed as CSU/TL (213,218 acres of those would be subject to the Baseline CSU) and 305,899 acres would be managed as NSO. Under Alternative D, a larger number of acres (145,284 acres) would be closed to oil and gas development compared to Alternatives A and B; 34,885 fewer closed acres than Alternative C. Alternative D provides exceptions to leasing stipulations that would provide more flexibility for oil and gas development compared to Alternatives B and C.
Minerals			
Potash			
Applying lease stipulations with minor (TL and CSU) or major (NSO) constraints could result in additional costs, delays, or complexity of operations. Under	**B1:** Impacts to potash development would be similar to those described under Alternative A; however, additional stipulations, BMPs, and lease notices would reduce the level of development compared to Alternative A. Alternative B1 would not	Impacts from closing the entire Planning Area (785,567 acres) to new potash leasing and development would be the	Impacts to potash leasing and development would be very similar to those described under Alternative B1; however, Alternative D provides

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
Alternative A, the projection for potash development would be 133 non-production well pads (599 acres of disturbance), 104 production well pads (624 acres of disturbance), as well as 4,216 acres of surface disturbance associated with processing facilities. Alternative A would allow the most flexibility for potash development with 210,884 acres open subject to standard terms and conditions. About 440,356 acres would be managed with CSU and TL stipulations, which could require additional cost or delays in development; but leases could be developed on these lands. Applying 133,574 acres of NSO stipulation would increase the cost and complexity of operations, requiring the use of methods such as horizontal drilling to access resources. Closing 753 acres to potash leasing would eliminate opportunities to develop potash resources in those areas. Processing facilities could not be constructed within lands managed as NSO and closed. Applying BMPs could delay potash development or affect the location and timing of development.	manage any lands open to development subject to standard terms and conditions which would reduce the flexibility for development of potash leases. Under Alternative B1, the projection for potash development would be 72 non-production well pads (323 acres of disturbance), 54 production well pads (324 acres of disturbance), as well as 3,037 acres of surface disturbance associated with processing facilities resulting in less surface disturbance than in Alternative A. Approximately 103,619 acres would be managed as PLAs (57,620 acres with CSU/TL and 45,999 acres with NSO) and 44,660 acres managed as PPFAs, which would allow potash resources to be developed or processed in these areas. **B2:** Closing the entire Planning Area to new potash leasing and development would eliminate new potash leases throughout the Planning Area. Alternatives B2 and C would have the greatest impacts to potash leasing and development, among all, compared to Alternatives A, B1, and D.	same as those described under Alternative B2.	exceptions to leasing stipulations that would provide more flexibility for potash development. For example, Alternative D would allow small-scale processing facilities, which could result in production of additional potash resources.
Natural Areas			
There are 429 acres of the Beaver Creek Natural Area within the Planning Area. All of this	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
acreage is managed with an NSO stipulation, which would protect, preserve, and maintain its wilderness characteristics. There is no further analysis of this resource in Chapter 4.			
Paleontological Resources			
Under Alternative A, impacts to paleontological resources would occur from surface-disturbing activities associated with oil, gas, and potash development. About 651,270 acres (83% of the Planning Area) are open to mineral leasing and development under standard terms and conditions or CSU and TL stipulations. Because development may occur in these areas, impacts would be greatest within 83 percent of the Planning Area. The remaining 17 percent of the Planning Area is subject to an NSO stipulation (133,574 acres) and closed to mineral leasing (753 acres). Paleontological resources would incur very few impacts from oil, gas or potash leasing and development within these areas.	Impacts to paleontological resources would be similar to those described in Alternative A; however, Alternative B has additional protections to paleontological resources from lease stipulations, the Baseline CSU stipulation, Lease Notices, and BMPs. **B1:** About 228,926 acres (29% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because oil and gas development may occur in these areas, impacts would be greatest within 29 percent of the Planning Area. The remaining 58 percent of the Planning Area is subject to an NSO stipulation (452,269 acres) and closed to oil and gas leasing (753 acres). About 103,619 acres would be initially open to potash leasing and development within the PLAs, reducing the density of disturbance within these areas. Alternative B1 would reduce the availability of lands for potash leasing compared to Alternative A, thereby reducing impacts to paleontological resources. **B2:** About 285,806 acres (36% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because oil and gas development may occur in these areas, impacts would be greatest within 36 percent of the Planning Area. The remaining 64 percent of the Planning Area is subject to an NSO stipulation (499,008 acres) and closed to oil and gas leasing (753 acres). Closing the Planning Area to potash leasing would prevent damage to paleontological resources to a greater degree compared to Alternatives A and B1.	Impacts to paleontological resources would be similar to those described in Alternatives A, B and B2; however, Alternative C provides the greatest protections to paleontological resources from lease stipulations, the Baseline CSU stipulation, Lease Notices, and BMPs. About 54,799 acres (7% of the Planning Area) are open to oil and gas leasing subject to CSU and TL stipulations. Because oil and gas development may occur in these areas, impacts would be greatest within 7 percent of the Planning Area. The remaining 93 percent of the Planning Area is subject to an NSO stipulation (550,599 acres) and closed to oil and gas leasing (180,169 acres). Impacts to paleontological resources from closing the Planning Area to potash leasing would be the same as described under Alternative B2.	Impacts to paleontological resources would be similar to those described in Alternative B1. Impacts to paleontological resources from lease stipulations, the Baseline CSU stipulation, Lease Notices, and BMPs would be the same as described under Alternative B1. Exceptions to lease stipulations, such as the development of small potash processing facilities could increase impacts to paleontological resources compared to Alternative B1.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
Recreation			
Oil and gas and potash leasing could reduce the quality of recreation experiences where roads, trails, and dispersed camping occur. Wells, pipeline corridors, increased road traffic, noise, dust, and the visual impact of facilities in otherwise natural areas could reduce the quality of recreation experiences. The greatest impacts to recreation could occur within 153,469 acres of SRMAs open to mineral leasing subject to standard terms and conditions. Approximately 229,459 acres of SRMAs managed with CSU and TL stipulations could reduce overall impacts through protective measures. Applying NSO stipulations to 124,163 acres of SRMAs would eliminate most impacts to recreation.	Impacts to recreation would be similar to those described in Alternative A; however, Alternative B has additional management such as lease stipulations, the Baseline CSU stipulation, Lease Notices, and BMPs that would reduce impacts to recreation and protect vistas, soundscapes, and recreational experiences. No lands would be open to mineral leasing subject to standard terms and conditions compared to Alternative A, which would reduce impacts to recreation from mineral leasing. **B1:** Approximately 100,104 acres of SRMAs managed with CSU and TL stipulations could reduce impacts to recreation through protective measures. Applying NSO stipulations to 308,371 acres of SRMAs would eliminate most impacts to recreation and would protect recreation to a greater degree than Alternative A. **B2:** Approximately 156,982 acres of SRMAs managed with CSU and TL stipulations could reduce impacts to recreation through protective measures. Applying NSO stipulations to 354,470 acres of SRMAs would eliminate most impacts to recreation and would protect recreation to a greater degree than Alternatives A and B1.	Impacts to recreation would be similar to those described in Alternative B. Alternative C provides the most protection to recreation resources from applying NSO stipulations to 392,918 acres of SRMAs and closing 118,534 acres of SRMAs to oil and gas development. Alternative C would reduce impacts to recreation to a greater degree than Alternatives A, B and D.	Impacts to recreation would be similar to those described in Alternative B1. However, exceptions to lease stipulations, such as those for VRM II, the Baseline CSU and high use recreational trails, could increase impacts to recreation compared to Alternative B1. Approximately 101,353 acres of SRMAs managed with CSU and TL stipulations could reduce impacts to recreation through protective measures. Applying NSO stipulations to 221,211 acres of SRMAs and closing 85,911 acres of SRMAs to oil and gas development. Alternative D provides greater protections to recreation resources than Alternative A, but fewer than Alternatives B1, B2, and C.
Riparian Resources			
Impacts to riparian resources would result from surface-disturbing activities where soil and vegetation resources are damaged or removed by actions such as oil and gas and potash leasing and development. Under Alternative A, lands would be open for leasing of oil, gas, and potash within the same area, subject only to standard lease terms and conditions (210,884 acres). These areas would be the most vulnerable to damage or	Alternative B provides greater protection to riparian resources through BMPs, lease stipulations, and buffer distances for riparian habitat and soil resources compared to Alternative A. Alternative B requires buffer distances of 500 feet and NSO stipulations for riparian resources on 69,786 acres, providing greater acreage of protection compared to Alternative A. **B1:** Impacts to riparian resources would be fewer than those described under Alternative A. Alternative B1 would allow oil, gas, and potash leasing with minor (CSU/TL) and major constraints (NSO) stipulations only, with no areas open to leasing subject to standard terms and conditions.	Alternative C provides the greatest protection to riparian resources through BMPs, lease stipulations, and buffer distances for riparian habitat and soil resources compared to Alternatives A and B. Alternative C requires buffer distances of 660 feet and NSO stipulations for riparian resources on 91,558 acres, providing the greatest acreage of protection compared to the other alternatives.	Alternative D provides greater protection to riparian resources through BMPs, lease stipulations, and buffer distances for riparian habitat and soil resources compared to Alternative A, and would result in the same acreage of protection as provided in Alternative B, but less than that provided in Alternative C. Closing 145,284 acres to new oil and gas mineral leases could protect larger areas of

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
loss of vegetation and soil resources and could result in the greatest impacts to riparian resources from erosion and runoff. Alternative A requires buffer distances of 330 feet and NSO stipulations for riparian resources on 50,495 acres, providing the least acreage of protection compared to the other alternatives.	Alternative B1 would reduce impacts to riparian resources from soil and vegetation loss, erosion, and runoff compared to Alternative A. Potash leasing (103,619 acres) could occur but not within the same areas as oil and gas leasing, limiting the amount of infrastructure, surface disturbance and soil loss within the PLAs. **B2:** Impacts to riparian resources would be fewer than those described under Alternatives A and B1. Alternative B2 would allow oil and gas and potash leasing with minor (CSU/TL) and major (NSO) constraints (NSO) stipulations only, with no areas open to leasing subject to standard terms and conditions, and there would be no potash leasing. Alternative B2 would reduce impacts to riparian resources through larger areas with NSO stipulations for oil and gas and would reduce surface disturbance from not allowing potash leasing compared to Alternatives A and B1.	Impacts to riparian resources would be fewer than those described under Alternatives A and B1 and similar to B2. Alternative C would protect the largest areas of riparian resources with greater areas of NSO stipulations and 180,169 acres closed to mineral leasing.	riparian resources compared to Alternatives A and B.
Social and Economic			
Under Alternative A, oil and gas development and production would generate approximately $502 million (M) in economic output and $135M in labor income in the socioeconomic study area over the 15-year life of the plan, and generate approximately 225 jobs on an average annual basis. Potash production facilities (PPFs) would generate $2,782M in expenditures and generate 3,252 jobs. Potash well development and operation would generate $1,223M in output, $325M in labor income, and 490 jobs. Recreation would generate $761M in output, $447M in labor income, and 1,086 jobs. Loss of grazing forage due to PPF development would result in	**B1**: Under Alternative B1, oil and gas development and production would generate approximately $329M in economic output and $88M in labor income in the socioeconomic study area over the 15-year life of the plan, and generate approximately 154 jobs on an average annual basis. PPFs would generate $1,505M in expenditures and generate 1,890 jobs. Potash well development and operation would generate $641M in output, $170M in labor income, and 246 jobs. The economic impacts of recreation would be the same as Alternative A. Loss of grazing forage due to PPF development would result in losses of $0.042M in output, $0.004M in labor income, and 0.02M jobs. Fiscal revenue generation would be less than Alternative A but still substantial, and similar to Alternative D. Impacts on community services and social systems are possible under this alternative. Impacts to non-market values under this alternative would be	Under Alternative C, oil and gas development and production would generate approximately $80M in economic output and $21M in labor income in the socioeconomic study area over the 15-year life of the plan, and generate approximately 37 jobs on an average annual basis. No potash development or economic impacts would occur under this alternative. The economic impacts of recreation would be the same as Alternative A. No economic losses to livestock grazing would occur. Fiscal revenue generation would be the least under this alternative. Impacts on community services and social systems are unlikely	Under Alternative D, oil and gas development and production would generate approximately $365M in economic output and $98M in labor income in the socioeconomic study area over the 15-year life of the plan, and generate approximately 171 jobs on an average annual basis. PPFs would generate $1,505M in expenditures and generate 1,890 jobs. Potash well development and operation would generate $669M in output, $178M in labor income, and 259 jobs. The economic impacts of recreation would be the same as Alternative A. Losses of grazing forage due to PPF development would have the same impacts as Alternative

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
losses of $0.6M in output, $0.057M in labor income, and 0.35 jobs. Fiscal impacts (generation of royalties, property taxes, and sales taxes) would be greatest under this alternative. Impacts on community services and social systems are likely under this alternative. Impacts to non-market values would be greatest under this alternative. No environmental justice impacts are expected under Alternative A or any other alternative.	reduced compared to Alternative A, but greater than such impacts under the other alternatives. **B2**: Under Alternative B2, oil and gas development and production would generate approximately $407M in economic output and $109M in labor income in the socioeconomic study area over the 15-year life of the plan, and generate approximately 191 jobs on an average annual basis. No potash development or economic impacts would occur under this alternative. The economic impacts of recreation would be the same as Alternative A. No economic losses to livestock grazing would occur. Fiscal revenue generation would be greater than under Alternative C but considerably less than under the other alternatives. Impacts on community services and social systems are unlikely under this Alternative. Impacts to non-market values would be relatively low under this alternative.	under this Alternative. Impacts to non-market values would be lowest under this alternative.	B1. Fiscal revenue generation would be less than Alternative A but still substantial, and similar to Alternative B1. As with Alternative B1, impacts on community services and social systems are possible under this alternative. Impacts to non-market values under this alternative would be reduced compared to Alternatives A and B1, but greater than such impacts under Alternatives B1 and C.
Soil and Water Resources			
Soil			
Impacts to soil resources would result from surface-disturbing activities, including oil, gas, and potash leasing, that would result in removal of vegetative cover, soil compaction and erosion, loss of productivity, and increased runoff and transport of salt and sediments. Soils located within the 210,884 acres that would be open to mineral leasing, subject to standard terms and conditions**,** would be the most vulnerable to surface disturbance from mineral leasing and development activities. Applying CSU and TL stipulations to mineral leasing to 440,386 acres would reduce the amount of surface disturbance	Impacts to soil resources would be similar to those described under Alternative A, except application of additional lease stipulations, including the Baseline CSU, and BMPs for soils, hydrology, and other resources could minimize impacts to soil resources. **B1:** Under Alternative B1, oil and gas leasing would not overlap areas of potash leasing (103,619 acres), thereby limiting the amount of surface disturbance from concurrent leasing activities. There would be no areas open to oil and gas and potash leasing with standard terms and conditions in Alternative B, providing additional protection to soil, as compared to Alternative A. CSU and TL stipulations for oil and gas leasing would be applied to 228,926 acres and would provide similar protection to soil resources as stated in Alternative A. However, 452,269 acres would be subject to an NSO stipulation, which is greater than that in Alternative A, and 753 acres would be closed	Impacts to soil resources would be similar to those described under Alternatives A and B. Alternative C would close the Planning Area to potash leasing and would apply the most protective lease stipulations and BMPs, providing the greatest protection to soil resources among all of the alternatives. CSU or TL stipulations (including the Baseline CSU) for oil and gas leasing would be applied to 54,799 acres and would provide similar protection to soil resources as stated in Alternative A. However, an NSO stipulation for oil and gas leasing would be	Impacts to soil resources would be similar to those described under Alternatives A and B1. CSU and TL stipulations (including the Baseline CSU) for oil and gas leasing would be applied to 230,765 acres and would provide similar protection to soil resources as stated in Alternative A. However, 305,899 acres would be subject to an NSO stipulation, and 145,284 acres would be closed which would prevent impacts to soil resources. These restrictions are greater than those in Alternative A, similar to those in Alternative B, and less than those in Alternative C.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
and minimize vegetation loss, soil erosion and compaction. Impacts to soil resources would be further reduced by applying an NSO stipulation for mineral leasing to 133,574 acres and closing 753 acres to mineral leasing by preventing surface disturbance, helping maintain vegetative cover, and stabilizing soil.	(same as Alternative A). This would provide greater protection to soil resources. **B2:** Under Alternative B2, no potash leasing would occur in the Planning Area (785,567 acres). There would be no areas open to oil and gas leasing with standard terms and conditions in Alternative B, which would reduce impacts to soils, as compared to Alternative A. CSU and TL stipulations would be applied to 285,806 acres, 499,008 acres would be subject to an NSO stipulation, and 753 acres would be closed to oil and gas leasing (same as Alternative A). There would be fewer acres subject to CSU and TL stipulations compared to Alternative A, and greater acreage subject to NSO stipulations, which would prevent impacts to soil resources when compared to Alternative A.	applied to 550,599 acres, and 180,169 acres would be closed to oil and gas leasing. There would be a much greater amount of acreage either subject to NSO stipulations, or entirely closed, which would prevent impacts to soil resources, as compared to Alternatives A and B.	Under Alternative D, management would protect soil resources to a lesser degree than Alternative B1 because Alternative D provides exceptions to leasing stipulations, which could lead to some additional development and disturbance to soils. Alternative D provides more protection to soil resources than Alternative A, but less than Alternatives B2 and C.
Water			
Impacts to water resources would result from surface-disturbing activities, including oil, gas, and potash leasing, that would remove and disturb vegetation, expose soils to the erosive forces of water and wind, and altering and accelerating overland flow, resulting in increased transport of sediment, salt, and excess nutrients to water bodies or groundwater sources. Water resources within the 210,884 acres open to mineral leasing, subject to standard terms and conditions, would be the most vulnerable to surface disturbance from leasing activities. Applying CSU and TL stipulations to mineral leasing to 440,386 acres would reduce the amount of surface disturbance and minimize	Impacts to water resources would be similar to those described under Alternative A, except application of additional lease stipulations, including the Baseline CSU, and BMPs for hydrology, riparian areas, soils, and other resources could minimize impacts to water resources to a much greater degree than Alternative A. **B1:** Under Alternative B1, oil and gas leasing would not overlap areas of potash leasing (103,619 acres), thereby limiting the amount of surface disturbance from concurrent leasing activities. There would be no areas open to oil and gas and potash leasing with standard terms and conditions in Alternative B, providing additional protection to water resources, as compared to Alternative A. CSU and TL stipulations for oil and gas leasing would be applied to 228,926 acres. However, 452,269 acres would be subject to an NSO stipulation, which is greater than that in Alternative A, and 753 acres would be closed (same as Alternative A). This would provide greater	Impacts to water resources would be similar to those described under Alternatives A and B. Alternative C would close the Planning Area to potash leasing and would apply the most protective lease stipulations and BMPs, providing the greatest protection to water resources among all of the alternatives. CSU or TL stipulations (including the Baseline CSU) for oil and gas leasing would be applied to 54,799 acres and would provide similar protection to water resources as stated in Alternative A. However, an NSO stipulation for oil and gas leasing would be applied to 550,599 acres and 180,169 acres would be closed	Impacts to water resources would be similar to those described under Alternatives A and B1. CSU and TL stipulations (including the Baseline CSU) for oil and gas leasing would be applied to 230,765 acres and would provide similar protection to water resources as stated in Alternative A. However, 305,899 acres would be subject to an NSO stipulation and 145,284 acres would be closed which would prevent impacts to water resources. These restrictions are greater than those in Alternative A, similar to those in Alternative B, and less than those in Alternative C. Under Alternative D, management would protect

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
vegetation loss, erosion and overland flow. Impacts to water resources would be further reduced from application of an NSO stipulation for mineral leasing to 133,574 acres, and closing areas to mineral leasing (753 acres) by preventing surface disturbance, helping to maintain vegetative cover, stabilize soil, and prevent runoff and erosion.	protection to water resources than that provided in Alternative A. **B2:** Under Alternative B2, no potash leasing would occur in the Planning Area (785,567 acres). There would be no areas open to oil and gas leasing with standard terms and conditions in Alternative B, which would reduce impacts to water resources as compared to Alternative A. CSU and TL stipulations would be applied to 285,806 acres and 499,008 acres would be subject to an NSO stipulation, and 753 acres would be closed to oil and gas leasing (same as Alternative A). There would be fewer acres subject to CSU and TL stipulations compared to Alternative A, and greater acreage subject to NSO stipulations, which would prevent impacts to water resources when compared to Alternative A.	to oil and gas leasing. There would be a much greater amount of acreage either subject to NSO stipulations, or entirely closed, which would prevent impacts to water resources, which is greater than that provided in Alternatives A and B.	water resources to a lesser degree than Alternative B1 because Alternative D provides exceptions to leasing stipulations, which could lead to some additional development and indirect impacts to water resources. Alternative D provides more protection to water resources than Alternative A, but less than Alternatives B2 and C.
Special Designations			
Special Designations: Areas of Critical Environmental Concern			
Under Alternative A, applying a NSO stipulation to mineral leasing on all ACECs (26,187 acres) could prevent surface disturbance from oil and gas leasing, protect scenic vistas, and prevent erosion and runoff from development activities, supporting the relevant and important values of the ACECs.	**B1:** Applying an NSO stipulation to oil and gas leasing on 22,936 acres of ACECs and applying an NSO stipulation to 3,251 acres of potash leasing would have the same impacts as those described under Alternative A. **B2:** Applying an NSO stipulation to oil and gas leasing on 26,187 acres ACECs and closing the entire Planning Area to potash leasing would have impacts similar to those described under Alternative A.	Closing 26,187 acres of ACECs to oil and gas and potash leasing would have a similar impact as under Alternative A, except for ACECs where mineral closures would protect areas where scenery is a relevant and important value. Horizontal drilling for underlying mineral resources would not be permitted, which could protect the scenic resources around the edges of the Behind the Rocks, Highway 279/Shafer Basin/Long Canyon, Indian Creek, and Shay Canyon ACECs, compared to Alternatives A, B1 and B2.	Applying an NSO stipulation to oil and gas leasing on 9,561 acres of ACECs, closing 13,375 acres of ACECs to oil and gas leasing and applying an NSO stipulation to 3,251 acres of potash leasing would have a similar impact as under Alternative A, except where scenery is a relevant and important value. Under Alternative D, horizontal drilling for underlying mineral resources would not be permitted in the closed portions of the Highway 279/Shafer Basin/Long Canyon ACEC and all of the Indian Creek ACEC, which could protect the scenic resources around the edges of

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
			these ACECs, compared to Alternatives A, B1 and B2.
Special Designations: National Historic Trails and Backways and Byways			
Old Spanish National Historic Trail: Identifying and classifying segments of the OSNHT would help to preserve the historic integrity and condition of the trail. Impacts from oil, gas, and potash development could reduce the natural and historic settings along the OSNHT where leasing occurs within sight of the trail. Wells, pipeline corridors, increased road traffic, noise, dust, and the visual impact of facilities in otherwise natural areas could all reduce the quality of historic settings along the trail. The use of BMPs could reduce some of these impacts. Areas where NSO or mineral closures overlap the trail and adjacent areas would eliminate surface disturbance and impacts to the historic settings of the trail. **Backways and Byways:** Oil and gas and potash leasing could reduce the scenic quality of backways and byways, which could decrease opportunities for scenic touring and enjoyment. Two miles of the specially designated roads would be within areas open to mineral leasing with standard terms and conditions, which could result in visual intrusion along the byways and backways. About 110 miles would be managed with a CSU stipulation, providing some visual protection. Applying an NSO	**Old Spanish National Historic Trail:** Applying a CSU stipulation requiring visual analysis within a 2-mile width on both sides of the OSNHT where the resource condition is Category II (location verified and evident with minor alteration) could help to protect the scenic and historic significance of the trail. **B1:** Impacts to the OSNHT would be similar to Alternative A, except there would be no lands open to mineral leasing, subject to standard terms and conditions. CSU stipulations would apply on more areas visible from the OSNHT, and the amount of lands with NSO stipulations visible would also increase. Limiting potash to PLAs and PPFAs could reduce some potash impacts compared with Alternative A; however, the Ten Mile Wash PLA and the PPFA near Crescent Junction are adjacent to the OSNHT, which could cause impacts from potash development to be more visible in those areas. **B2:** Impacts to the OSNHT would be similar to Alternative B1, except oil and gas leasing would be open in more areas along the OSNHT because of the preclusion of potash development in those same areas. Not allowing potash development under Alternative B2 would eliminate visual impacts from potash on the OSNHT. **Backways and Byways, Alternative B:** Applying an NSO stipulation along byways and backways would eliminate all but background visual impacts. The use of BMPs and applying the Baseline CSU stipulation could reduce background visual impacts to byways and backways.	**Old Spanish National Historic Trail:** Under Alternative C, applying an NSO stipulation within a 2-mile width on both sides along the entire OSNHT would protect the scenic and historic significance of the trail to a greater degree than Alternatives A and B. **Backways and Byways:** Applying an NSO stipulation to backways and byways would be similar to Alternative B, except the NSO stipulation would extend out to 2 miles, which could eliminate most background visual impacts. The use of BMPs and applying the Baseline CSU stipulation would have the same impacts as described under Alternative B.	**Old Spanish National Historic Trail:** Impacts from oil, gas, and potash leasing and CSU stipulations would be similar to Alternative B1, except exceptions to stipulations could be granted, which could create short-term impacts to scenic views along the OSNHT. A small-scale potash processing facility could be located within a PLA. A processing facility could disturb up to 100 acres of soil and vegetation, which, depending on the location, could reduce the scenic and historic settings along the OSNHT. **Backways and Byways:** Applying an NSO stipulation to backways and byways would have impacts similar to Alternative B, except exceptions to leasing stipulations could be granted, which could, for example, allow a small-scale potash processing facility located within the PLAs that could reduce the quality of scenic touring opportunities.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
stipulation on 58 miles of byways and backways would reduce foreground visual impacts by eliminating surface disturbance; however in many locations, background mineral operation would still be visible from scenic byways and backways. BMPs could be used at the implementation level to reduce the visibility of some minerals operations and pipelines.			
Special Designations: Wild and Scenic Rivers			
Applying an NSO stipulation to the suitable WSR segments along the Colorado and Green Rivers (19,347 acres) and closing the Monticello WSR Segment 3 along the Colorado River to mineral leasing (753 acres) would prevent mineral development and the associated surface disturbance that could adversely impact vegetation, soils, and scenic values within suitable WSR segments. Preventing surface disturbance could support the Outstanding Remarkable Values (ORV) of these rivers.	Impacts to suitable WSRs would be the same as those described under Alternative A.	Impacts to suitable WSRs would be similar to those described in Alternatives A and B, except that mineral closures would add further protection to these suitable WSRs where scenery is an ORV.	Impacts to suitable WSRs are the same as those described in Alternatives A and B.
Special Status Species			
Impacts to special status species habitat would result from surface-disturbing activities, habitat loss, habitat fragmentation, and human presence from activities such as oil, gas, and potash leasing and development. Protective management for special status species and their habitat would be the same across	Alternative B provides greater protection to special status species habitat through BMPs, lease stipulations, and buffer distances for riparian and other habitat compared to Alternative A. Habitat for special status species within the areas open to leasing with standard stipulations under Alternative A would be protected from oil, gas, and potash leasing under Alternative B by applying minor (CSU/TL) and major (NSO) stipulations.	Alternative C provides the greatest protection to special status species habitat through BMPs, lease stipulations, and buffer distances for riparian and other habitat compared to Alternatives A and B. Applying NSO stipulations (550,599 acres, 412,496 more acres compared to Alternative A) and	Alternative D provides greater protection to special status species habitat through BMPs, lease stipulations, and buffer distances for riparian and other habitat compared to Alternatives A and B. Habitat for special status species within the areas open to leasing with standard terms and conditions

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
all alternatives and would prevent or reduce impacts to special status species. Under Alternative A, lands would be open for leasing of oil, gas, and potash within the same area, subject only to standard lease terms and conditions (210,884 acres). These areas could result in the greatest impacts to special status species habitat.	**B1:** Impacts to special status species habitat would be fewer than those described under Alternative A. Alternative B1 would allow oil, gas, and potash leasing with minor (CSU/TL) and major (NSO) stipulations only, with no open leasing areas, reducing the amount of habitat open for mineral development. Potash leasing (103,619 acres) could occur but not within the same areas as oil and gas leasing, limiting the amount of infrastructure, surface disturbance, habitat loss, habitat fragmentation, and human presence within the leasing areas. Applying NSO stipulations to 452,269 acres, 314,166 more acres compared to Alternative A, would reduce impacts to special status species habitat. Closed acres would be the same as Alternative A (753 acres). **B2:** Impacts to special status species habitat would be fewer than those described under Alternatives A and B1. Alternative B2 would allow oil and gas leasing with minor (CSU/TL) and major (NSO) stipulations only, with no open leasing areas, and there would be no potash leasing. Applying NSO stipulations to 499,008 acres, 360,905 more acres compared to Alternative A, would reduce impacts to special status species habitat to a greater degree than Alternatives A and B1. Closed acres would be the same as Alternative A (753 acres).	closing 180,169 acres to new oil and gas leases, and closing the Planning Area to potash leasing would protect the largest areas of habitat for special status species compared to Alternatives A and B.	under Alternative A would be protected from oil, gas, and potash leasing under Alternative D by applying minor (CSU/TL) and major (NSO) stipulations and the closure of lands to mineral leasing (145,284 acres). Impacts from potash leasing would be very similar to Alternative B1 except that Alternative D allows exceptions to leasing stipulations, which could impact special status species. Impacts to special status species habitat from oil and gas leasing and development would be similar to those described under Alternative B1, except that Alternative D allows exceptions to leasing stipulations, which could impact special status species.
Vegetation			
Impacts to vegetation resources would result from surface-disturbing activities associated with oil and gas and potash leasing and development where soil and vegetation are damaged. The introduction and spread of invasive, non-native plant species would impact areas where vegetation is damaged or	Alternative B provides greater protection to vegetation resources through BMPs, lease stipulations, and buffer distances for riparian habitat; and protective management for sagebrush and soil resources compared to Alternative A. **B1:** Impacts to vegetation resources would be fewer than those described under Alternative A. Alternative B1 would allow oil, gas, and potash leasing with minor (CSU/TL) and major (NSO) constraints only, with no open leasing areas.	Alternative C provides the greatest protection to vegetation resources through BMPs, lease stipulations, and buffer distances for riparian habitat, and protective management for sagebrush and soil resources compared to Alternatives A and B.	Alternative D provides greater protection to vegetation resources through BMPs, lease stipulations, and buffer distances for riparian habitat, and protective management for sagebrush and soil resources compared to Alternative A, and would be very similar to Alternative B1. Alternative D

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
removed, and where vehicles, equipment, and increased activity occurs. Under Alternative A, lands would be open for leasing of oil, gas, and potash within the same area, subject only to standard lease terms and conditions (210,884 acres). These areas could be subject to greater damage or loss of vegetation, the spread of invasive, non-native plant species, and could result in the greatest impacts to vegetation resources from erosion and soil loss.	Potash leasing (103,619 acres) could occur, but not within the same areas as oil and gas leasing, limiting the amount of infrastructure, surface disturbance, removal or damage to vegetation, and soil loss within the leasing areas. **B2:** Impacts to vegetation resources would be fewer than those described under Alternatives A and B1. Alternative B2 would allow oil and gas leasing with minor (CSU/TL) and major (NSO) constraints only, with no open leasing areas, and there would be no potash leasing. Alternative B2 would reduce impacts to vegetation resources from removal of vegetation, soil loss, erosion, and spread of invasive, non-native plant species compared to Alternatives A and B1.	Impacts to vegetation resources would be fewer than those described under Alternatives A, B1 and B2. Alternative C would protect the largest areas of vegetation resources with larger areas of NSO stipulations and 180,169 acres closed to mineral leasing.	would provide some exceptions to mineral stipulations which could result in more impacts to vegetation resources compared to Alternative B1. Closing 145,284 acres to new oil and gas leases could protect larger areas of vegetation resources compared to Alternatives A and B, but less than Alternative C.
Visual Resources Management/Auditory Management (Soundscapes)			
Oil and gas and potash leasing could both reduce the quality of visual resources in some parts of the Planning Area, especially undeveloped areas and VRM Class II areas. Wells, pipeline corridors, and fugitive dust from facilities and vehicles in otherwise natural areas would lead to changes in the form, line, texture, and color of the landscape. Impacts would occur primarily on 210,884 acres open to leasing subject to standard terms and conditions. Applying CSU and TL stipulations to 440,356 acres could reduce overall impacts through protective measures such as shading, well location, and screening. Applying NSO stipulations to 133,574 acres and closing 753 acres to mineral leasing would eliminate impacts to	Applying the Baseline CSU stipulation and new BMPs would reduce impacts to visual resources and soundscapes from oil and gas development by reducing noise and requiring screening to reduce the visibility of development. **B1:** There would be fewer impacts to visual resources from oil and gas and potash leasing development compared to Alternative A. Applying CSU stipulations to 228,926 acres would reduce impacts to visual resources, and applying NSO stipulations on 452,269 acres would prevent visual disturbances from mineral development. **B2:** There would be fewer impacts to visual resources from oil and gas leasing development compared to Alternatives A and B1. Applying CSU stipulations to 285,806 acres would reduce impacts to visual resources, and applying NSO stipulations on 499,008 acres would prevent visual disturbances from mineral development to a greater degree than Alternatives A and B1.	Impacts to visual resources and soundscapes would be similar to those described in Alternative B. Alternative C provides the most protection to visual resources and soundscapes by applying noise mitigation stipulations, NSO stipulations (550,599 acres), and closing 180,169 acres to oil and gas development.	Impacts to visual resources and soundscapes would be similar to those described in Alternative B. Alternative D provides greater protections to visual resources than Alternative A, but fewer than Alternatives B1, B2, and C. There could be a greater impact in Alternative D from exceptions to lease stipulations, especially those for VRM II areas, than in Alternative B. Applying NSO stipulations to 305,899 acres and closing 145,284 acres to oil and gas development would reduce impacts to visual resources and soundscapes to a greater degree than Alternative A and similar to Alternative B1.

Alternative A	Alternative B1 and B2	Alternative C	Alternative D
visual resources from mineral development. Impacts to soundscapes would occur on the same acreage as to visual resources from the noise of machinery, vehicles, and equipment used for development of mineral leases.			Impacts to soundscapes would be the same as those described under Alternative C.
Wildlife and Fisheries			
Impacts to wildlife and fish habitat would result from surface-disturbing activities, habitat loss and fragmentation, human presence, and erosion into fish habitat from activities such as oil, gas, and potash leasing and development. Protective management for WSRs, raptors, and bighorn sheep would be the same across all alternatives and would prevent or reduce impacts to wildlife and fisheries. Under Alternative A, lands would be open for leasing of oil, gas, and potash within the same area, subject only to standard lease terms and conditions (210,884 acres). These areas could result in the greatest impacts to wildlife and fisheries.	Alternative B provides greater protection to wildlife and fish habitat through BMPs, lease stipulations, buffer distances for riparian/wetland and other sensitive areas; and specific management for big game habitat compared to Alternative A. Habitat for wildlife and fish within the areas open to leasing with standard terms and conditions under Alternative A would be protected from oil, gas, and potash leasing and development under Alternative B by applying minor (CSU/TL) and major (NSO) constraints. **B1:** Impacts to wildlife and fish habitat would be fewer than those described under Alternative A. Applying NSO stipulations to 452,269 acres, 314,166 more acres compared to Alternative A, would reduce impacts to wildlife and fish habitat. Potash leasing (103,619 acres) could occur but not within the same areas as oil and gas leasing, limiting the amount of infrastructure, surface disturbance, habitat loss and fragmentation, human presence, and erosion into fish habitat within the leasing areas. **B2:** Impacts to wildlife and fish habitat would be fewer than those described under Alternatives A and B1. Applying NSO stipulations to 499,008 acres, 360,905 more acres compared to Alternative A, and closing the Planning Area to potash leasing would reduce impacts to wildlife and fish habitat to a greater degree than Alternatives A and B1.	Alternative C provides the greatest protection to wildlife and fish habitat through BMPs, lease stipulations, buffer distances for riparian/wetland and other sensitive areas; and specific management for big game habitat compared to Alternatives A and B. Habitat for wildlife and fish within the areas open to leasing with standard terms and conditions under Alternative A would be protected from oil, gas, and potash leasing under Alternative C by applying minor (CSU/TL) and major (NSO) constraints and the closure of lands to mineral leasing (180,169 acres). Applying NSO stipulations (550,599 acres, 412,496 more acres compared to Alternative A) and closing 180,169 acres to new oil and gas leases would protect the largest areas of habitat for wildlife and fish compared to Alternatives A and B.	Alternative D provides greater protection to wildlife and fish habitat through BMPs, lease stipulations, buffer distances for riparian/wetland and other sensitive areas; and specific management for big game habitat compared to Alternative A, less protection than Alternative C, and similar protection to Alternative B1. Applying NSO stipulations to 305,899 acres (176,796 more acres compared to Alternative A) and closing 145,284 acres to mineral leasing would reduce impacts to wildlife and fish habitat to a greater degree than Alternative A, and impacts would be similar to those described under Alternative B1. Under Alternative D, exceptions to lease stipulations for oil, gas, and potash leasing could be allowed, which could result in more impacts to fish and wildlife habitat compared to Alternative B1.